

SEQUENCE LISTING

<110> Tang, Y. Tom
 Zhou, Ping
 Goodrich, Ryle
 Liu, Chenghua
 Asundi, Vinod
 Ren, Feiyan
 Zhang, Jie
 Zhao, Qing A.
 Xue, Aidong J.
 Yang, Yonghong
 Wehrman, Tom
 Drmanac, Radoje T.

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 Polypeptides

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Thr	Ile	Asp	Pro	Ala	Val	Ser	Lys	Glu	Leu	Ala	Lys	Glu	Val	Glu	Lys		
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atg	gga	gca	gtt	ttc	atg	gat	gcc	cct	gtt	tct	ggg	ggg	gta	gga	gct		594
Met	Gly	Ala	Val	Phe	Met	Asp	Ala	Pro	Val	Ser	Gly	Gly	Val	Gly	Ala		
	150				155					160					165		
gca	cga	tct	ggg	aac	ctc	acg	ttt	atg	gtg	gga	gga	gtt	gaa	gat	gaa		642
Ala	Arg	Ser	Gly	Asn	Leu	Thr	Phe	Met	Val	Gly	Gly	Val	Glu	Asp	Glu		
				170					175					180			
ttt	gct	gct	gcc	caa	gag	ttg	ctg	ggg	tgc	atg	ggc	tcc	aac	gtg	gtg		690
Phe	Ala	Ala	Ala	Gln	Glu	Leu	Leu	Gly	Cys	Met	Gly	Ser	Asn	Val	Val		
			185					190					195				
tac	tgt	gga	gct	gtt	ggg	act	ggg	cag	gcg	gca	aag	atc	tgc	aac	aac		738
Tyr	Cys	Gly	Ala	Val	Gly	Thr	Gly	Gln	Ala	Ala	Lys	Ile	Cys	Asn	Asn		
		200					205					210					
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Met	Leu	Leu	Ala	Ile	Ser	Met	Ile	Gly	Thr	Ala	Glu	Ala	Met	Asn	Leu		
		215				220					225						
gga	atc	agg	tta	ggg	ctt	gac	cca	aaa	cta	ctg	gct	aaa	atc	cta	aat		834
Gly	Ile	Arg	Leu	Gly	Leu	Asp	Pro	Lys	Leu	Leu	Ala	Lys	Ile	Leu	Asn		
	230				235					240					245		
atg	agc	tca	gga	cgg	tgt	tgg	tca	agt	gac	act	tat	aat	cct	gta	cct		882
Met	Ser	Ser	Gly	Arg	Cys	Trp	Ser	Ser	Asp	Thr	Tyr	Asn	Pro	Val	Pro		
				250					255					260			
gga	gtg	atg	gat	ggc	gtt	ccc	tcg	gct	aat	aac	tat	cag	ggg	gga	ttt		930
Gly	Val	Met	Asp	Gly	Val	Pro	Ser	Ala	Asn	Asn	Tyr	Gln	Gly	Gly	Phe		
			265					270					275				
gga	aca	aca	ctc	atg	gct	aag	gat	ctg	gga	ttg	gca	caa	gac	tct	gct		978
Gly	Thr	Thr	Leu	Met	Ala	Lys	Asp	Leu	Gly	Leu	Ala	Gln	Asp	Ser	Ala		
		280					285					290					
acc	agc	aca	aag	agc	cca	atc	ctt	ctt	ggc	agt	ctg	gcc	cat	cag	atc		1026
Thr	Ser	Thr	Lys	Ser	Pro	Ile	Leu	Leu	Gly	Ser	Leu	Ala	His	Gln	Ile		

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tac agg atg atg tgt gca aag ggc tac tca aag	aaa gac ttc tca tcc	1074	
Tyr Arg Met Met Cys Ala Lys Gly Tyr Ser Lys	Lys Asp Phe Ser Ser		
310	315 320 325		
gtg ttc cag ttc cta cga gag gag gag acc ttc	tga gtgt gccctttggc	1124	
Val Phe Gln Phe Leu Arg Glu Glu Glu Thr Phe *			
330	335		
cacggacact gttgggaacc aaactctgtc ttggagcctc	cttttagctc actccacaag	1184	
taaatggatt taatcaaagg tcacctatct gcttttgatt	gtctaggtca cagtaatccc	1244	
taggattttt caccgcttat tctttttgtc tttttaacaa	acatattatc cgaatttttt	1304	
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tccccaagca tcctcaacta aatcattgaa tacttcaatc	aggatattat ctgctttact	1424	
ttacaaataa aaccaaactt tttgtcaaca ggatgaaacc	catcttaaag gaaagaaaag	1484	
gaattggtgt gaagagagaa gttagagaag ggaaatgcag	tgaattacta tctgtgtcca	1544	
tcaggaagtt tgtcctgtta accaaatggg tactgcacta	ccagggttac tggttttatt	1604	
tccagggagc tgataaagca ggagaactgt tgctgcatgt	tttctatttg gactccgtca	1664	
caatatggta ggatatccct caccaactcc cgacactcag	cagacttggt tttatatatt	1724	
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atttcagagc caatgatgat atttgcttta gataattatt	atattattat aaatatagcc	1844	
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Lys Asn Ile Lys Ala Leu Val Ala Phe His Ser Thr Ala Leu Asp Lys	
5 10 15	

gaa att aca tca gca aat tat gct ggt gtc tgt aca tca tct gtg att	153
Glu Ile Thr Ser Ala Asn Tyr Ala Gly Val Cys Thr Ser Ser Val Ile	
20 25 30	
aaa gaa gaa aac att gat caa cca gga tac tgt tat ctc tca cct gat	201
Lys Glu Glu Asn Ile Asp Gln Pro Gly Tyr Cys Tyr Leu Ser Pro Asp	
35 40 45	
gga aag aga aaa act atg ctc tgc ttg gct tgt gga caa tcc atg aga	249
Gly Lys Arg Lys Thr Met Leu Cys Leu Ala Cys Gly Gln Ser Met Arg	
50 55 60 65	
aca gag aaa gga ctg aaa caa ttg ctt cca ggg gtt cca ttc ctc tgt	297
Thr Glu Lys Gly Leu Lys Gln Leu Leu Pro Gly Val Pro Phe Leu Cys	
70 75 80	
att tca ggc acc aag act cag aag ccc ttc tta caa ggg ccc ttc aag	345
Ile Ser Gly Thr Lys Thr Gln Lys Pro Phe Leu Gln Gly Pro Phe Lys	
85 90 95	
gtc atc agt gtg gct gag gtt gat ttg tgc tgt gac aag gct gaa aaa	393
Val Ile Ser Val Ala Glu Val Asp Leu Ser Cys Asp Lys Ala Glu Lys	
100 105 110	
act cta agt tac tac caa gca cgt cta ttg tct tta cgg atg aag acc	441
Thr Leu Ser Tyr Tyr Gln Ala Arg Leu Leu Ser Leu Arg Met Lys Thr	
115 120 125	
tgc acg caa gct gca tct cac agt ggc atg gca gcc aca cac cag aag	489
Cys Thr Gln Ala Ala Ser His Ser Gly Met Ala Ala Thr His Gln Lys	
130 135 140 145	
gca gtg aaa ata att gca tac aaa aat ggg gat ggg tat cgt aat ggg	537
Ala Val Lys Ile Ile Ala Tyr Lys Asn Gly Asp Gly Tyr Arg Asn Gly	
150 155 160	
aag tta att gtg gct gga aca ttc ccc atg ctt ctt aca gaa tgc acg	585
Lys Leu Ile Val Ala Gly Thr Phe Pro Met Leu Leu Thr Glu Cys Thr	
165 170 175	
gaa caa ctt ggg ctt gcc aga gca gcc tcc aaa gta tat acc aaa gat	633
Glu Gln Leu Gly Leu Ala Arg Ala Ala Ser Lys Val Tyr Thr Lys Asp	
180 185 190	
gga acc cca atc ttt acc ttg cgt gat ttg gtt tta tgg gct cta gat	681
Gly Thr Pro Ile Phe Thr Leu Arg Asp Leu Val Leu Trp Ala Leu Asp	
195 200 205	
gaa tcc ttt ctc cag aga gac tct gag aaa caa aag caa gat gca gct	729
Glu Ser Phe Leu Gln Arg Asp Ser Glu Lys Gln Lys Gln Asp Ala Ala	
210 215 220 225	
cct gtt gga aaa gaa cag ata att gtt gaa agt atg gaa gaa aat cca	777
Pro Val Gly Lys Glu Gln Ile Ile Val Glu Ser Met Glu Glu Asn Pro	
230 235 240	
aga atg aaa gtg aaa aac aga tta ttt gca aaa tct gtg aca tcc gat	825

Arg	Met	Lys	Val	Lys	Asn	Arg	Leu	Phe	Ala	Lys	Ser	Val	Thr	Ser	Asp		
			245					250					255				
agt	ttg	gat	ggt	ata	gac	aag	tct	ttg	ctt	acc	ctc	atc	ctc	aga	aat	873	
Ser	Leu	Asp	Gly	Ile	Asp	Lys	Ser	Leu	Leu	Thr	Leu	Ile	Leu	Arg	Asn		
		260					265					270					
cct	att	gcc	atc	tgg	gtg	tct	tgt	ggt	gaa	cca	ttt	cta	cct	cca	aat	921	
Pro	Ile	Ala	Ile	Trp	Val	Ser	Cys	Gly	Glu	Pro	Phe	Leu	Pro	Pro	Asn		
		275					280				285						
gct	ttg	cag	aaa	gca	gaa	aaa	tta	gag	aaa	cag	aac	tgg	cta	aaa	aag	969	
Ala	Leu	Gln	Lys	Ala	Glu	Lys	Leu	Glu	Lys	Gln	Asn	Trp	Leu	Lys	Lys		
290					295					300					305		
gac	aga	att	ttg	gct	gat	cta	gat	acc	atg	aga	cac	aaa	atg	aga	cag	1017	
Asp	Arg	Ile	Leu	Ala	Asp	Leu	Asp	Thr	Met	Arg	His	Lys	Met	Arg	Gln		
				310					315					320			
tta	aaa	ggg	cgg	cga	gta	gcg	gca	tgt	cag	cca	gcc	acc	atg	ggt	cct	1065	
Leu	Lys	Gly	Arg	Arg	Val	Ala	Ala	Cys	Gln	Pro	Ala	Thr	Met	Val	Pro		
			325					330					335				
acc	aag	agc	cct	gtg	cag	ccc	gtg	gtg	gtt	gaa	gga	ggc	tgg	acc	gaa	1113	
Thr	Lys	Ser	Pro	Val	Gln	Pro	Val	Val	Val	Glu	Gly	Gly	Trp	Thr	Glu		
		340					345					350					
cag	act	caa	cag	gaa	att	aaa	ctc	atg	gaa	ctt	ata	aga	cat	aca	gag	1161	
Gln	Thr	Gln	Gln	Glu	Ile	Lys	Leu	Met	Glu	Leu	Ile	Arg	His	Thr	Glu		
		355				360					365						
gca	cac	ctt	tct	gaa	atc	caa	gaa	atg	gaa	tcc	aaa	ata	aat	ttt	cca	1209	
Ala	His	Leu	Ser	Glu	Ile	Gln	Glu	Met	Glu	Ser	Lys	Ile	Asn	Phe	Pro		
		370			375					380					385		
att	gca	acc	aaa	cgt	ata	gca	gtc	aag	ccg	agc	aac	ctg	tat	aag	cag	1257	
Ile	Ala	Thr	Lys	Arg	Ile	Ala	Val	Lys	Pro	Ser	Asn	Leu	Tyr	Lys	Gln		
				390					395					400			
ccc	aac	aca	aaa	cga	gtg	tgg	att	tat	cta	aat	gga	ggc	aga	cct	gaa	1305	
Pro	Asn	Thr	Lys	Arg	Val	Trp	Ile	Tyr	Leu	Asn	Gly	Gly	Arg	Pro	Glu		
			405					410					415				
gat	ggc	act	tat	gcc	tgg	ggc	aaa	act	att	tca	gag	ctg	ctg	caa	gac	1353	
Asp	Gly	Thr	Tyr	Ala	Trp	Gly	Lys	Thr	Ile	Ser	Glu	Leu	Leu	Gln	Asp		
		420					425					430					
tgc	tcc	tct	cgt	ctc	aaa	atg	acc	cac	cca	gct	aga	gca	ctg	tac	acc	1401	
Cys	Ser	Ser	Arg	Leu	Lys	Met	Thr	His	Pro	Ala	Arg	Ala	Leu	Tyr	Thr		
		435				440					445						
ccc	agt	gga	gag	cca	att	cag	tcc	tgg	gac	gac	ata	gag	cga	gat	atg	1449	
Pro	Ser	Gly	Glu	Pro	Ile	Gln	Ser	Trp	Asp	Asp	Ile	Glu	Arg	Asp	Met		
450					455				460						465		
gtc	atc	tgt	gtg	tct	atg	gga	cat	ggt	ttc	aaa	acc	cca	aaa	gag	tta	1497	
Val	Ile	Cys	Val	Ser	Met	Gly	His	Gly	Phe	Lys	Thr	Pro	Lys	Glu	Leu		

470	475	480	
aaa caa ctg atg gag atc aga gca aat tat gcc aga atc cga agg cag			1545
Lys Gln Leu Met Glu Ile Arg Ala Asn Tyr Ala Arg Ile Arg Arg Gln			
485	490	495	
cag ggc cct caa gcc aca gac att gtg gtg tca cca tcc acg aag ctg			1593
Gln Gly Pro Gln Ala Thr Asp Ile Val Val Ser Pro Ser Thr Lys Leu			
500	505	510	
ctg tct ctg gca cat ctc cac aat taa ctctc atcagaacca tcggattttc			1645
Leu Ser Leu Ala His Leu His Asn *			
515	520		
tgctgtatattt ttctggaaag aaaacttttct ttaccactt ataaacagaa gactgtgaca			1705
agaaggccaa ttatttccat cgctgaagac tctaaatttg gcaaattcttc taaataacaa			1765
tcctgcatag tttattaaaa aaaattagtc gtaaaattta tccttcaaaa atctgcattt			1825
taaataaaacc ctgacagtga tttctcaaga ctgtaaagat attagtctga gaatgcaact			1885
ctaacagact gctctgggca tcttttctct ttgccttggc caggcctctc agaattgagt			1945
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aag ctg ggc tcc tcc ggg ggt tgg ttt tta aga gtg ctg ggc cct gga			101
Lys Leu Gly Ser Ser Gly Gly Trp Phe Leu Arg Val Leu Gly Pro Gly			
10 15 20			
ggc tgt aat aca aaa gct gcg cgt ccc tta att tcc tcg gcg gtt tat			149
Gly Cys Asn Thr Lys Ala Ala Arg Pro Leu Ile Ser Ser Ala Val Tyr			
25 30 35			
gtg aag aac cag ctc agt ggg act cta cag att aaa cca ggg gtt ttc			197
Val Lys Asn Gln Leu Ser Gly Thr Leu Gln Ile Lys Pro Gly Val Phe			
40 45 50			

aat gaa tac aga acc ata tgg ttc aaa tcc tac agg acg atc ttt tcc	245
Asn Glu Tyr Arg Thr Ile Trp Phe Lys Ser Tyr Arg Thr Ile Phe Ser	
55 60 65	
tgt ttg aac aga ata aag agt ttc agg tac cct tgg gcg aga ctg tac	293
Cys Leu Asn Arg Ile Lys Ser Phe Arg Tyr Pro Trp Ala Arg Leu Tyr	
70 75 80 85	
agt act tcc caa acc act gtc gac agc ggt gag gta aaa acc ttc ttg	341
Ser Thr Ser Gln Thr Thr Val Asp Ser Gly Glu Val Lys Thr Phe Leu	
90 95 100	
gcc ctg gct cac aaa tgg tgg gat gaa caa gga gta tat gca cct ctt	389
Ala Leu Ala His Lys Trp Trp Asp Glu Gln Gly Val Tyr Ala Pro Leu	
105 110 115	
cat tcc atg aat gac ctg agg gtg cca ttt att agg gac aat ctt ctg	437
His Ser Met Asn Asp Leu Arg Val Pro Phe Ile Arg Asp Asn Leu Leu	
120 125 130	
aaa aca att cct aat cac cag cca gga aaa cct ttg ttg ggg atg aag	485
Lys Thr Ile Pro Asn His Gln Pro Gly Lys Pro Leu Leu Gly Met Lys	
135 140 145	
att ctt gac gtt ggc tgt ggt ggt ggg ctg tta act gaa cct cta ggg	533
Ile Leu Asp Val Gly Cys Gly Gly Gly Leu Leu Thr Glu Pro Leu Gly	
150 155 160 165	
cgg ctt ggg gct tca gtt att gga atc gac cct gtg gat gag aac att	581
Arg Leu Gly Ala Ser Val Ile Gly Ile Asp Pro Val Asp Glu Asn Ile	
170 175 180	
aaa aca gca caa tgc cat aaa tca ttt gat cca gtc cgg gat aag aga	629
Lys Thr Ala Gln Cys His Lys Ser Phe Asp Pro Val Arg Asp Lys Arg	
185 190 195	
ata gag tac aga gtg tgt tcc ctg gaa gag att gtg gaa gag act gca	677
Ile Glu Tyr Arg Val Cys Ser Leu Glu Glu Ile Val Glu Glu Thr Ala	
200 205 210	
gaa aca ttt gat gct gtt gta gct tct gaa gtt gta gaa cat gtg att	725
Glu Thr Phe Asp Ala Val Val Ala Ser Glu Val Val Glu His Val Ile	
215 220 225	
gat cta gaa aca ttt tta cag tgc tgc tgt caa gtg tta aaa ccc ggt	773
Asp Leu Glu Thr Phe Leu Gln Cys Cys Cys Gln Val Leu Lys Pro Gly	
230 235 240 245	
ggt tct tta ttc att act aca atc aac aaa aca caa ctt tcc tat gcc	821
Gly Ser Leu Phe Ile Thr Thr Ile Asn Lys Thr Gln Leu Ser Tyr Ala	
250 255 260	
ttg gga att gtt ttt tca gag caa att gca ggt att gta cca aaa ggt	869
Leu Gly Ile Val Phe Ser Glu Gln Ile Ala Gly Ile Val Pro Lys Gly	
265 270 275	
act cat aca tgg gag aag ttt gtt tca cct gaa aca cta gag agc att	917

Thr	His	Thr	Trp	Glu	Lys	Phe	Val	Ser	Pro	Glu	Thr	Leu	Glu	Ser	Ile	
		280					285					290				
ctg	gaa	tca	aat	ggt	ctg	tca	ggt	caa	aca	gtg	gta	gga	atg	ctc	tat	965
Leu	Glu	Ser	Asn	Gly	Leu	Ser	Val	Gln	Thr	Val	Val	Gly	Met	Leu	Tyr	
	295					300				305						
aac	ccc	ttc	tca	ggt	tac	tgg	cat	tgg	agt	gaa	aat	acc	agc	ctt	aac	1013
Asn	Pro	Phe	Ser	Gly	Tyr	Trp	His	Trp	Ser	Glu	Asn	Thr	Ser	Leu	Asn	
310				315					320			325				
tat	gca	gct	cat	gct	gtg	aaa	tcc	agg	gtc	cag	gaa	cac	cca	gcc	tct	1061
Tyr	Ala	Ala	His	Ala	Val	Lys	Ser	Arg	Val	Gln	Glu	His	Pro	Ala	Ser	
				330				335						340		
gct	gag	ttt	ggt	tta	aag	gga	gaa	aca	gaa	gag	ctc	caa	gct	aat	gcc	1109
Ala	Glu	Phe	Val	Leu	Lys	Gly	Glu	Thr	Glu	Glu	Leu	Gln	Ala	Asn	Ala	
			345				350					355				
tgc	acc	aat	cca	gct	gtg	cat	gaa	aag	ctg	aag	aaa	tga	attg	tttctg		1158
Cys	Thr	Asn	Pro	Ala	Val	His	Glu	Lys	Leu	Lys	Lys	*				
	360					365					370					
agaactatag	taatatggct	tggatatctg	atgttttcaa	atacaagaaa	tgtacaattt											1218
atcctttgag	agagaatcat	gaagaaaaga	aggtcaataa	aaagggctaa	aaccttggac											1278
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catatacttc ccatgataaa cttaagtggc gagtaagaaa agaagct atg atg ggt	176
	Met Met Gly
	1
ctg gct cag ctt tat aag aaa tac tgt ctt cat ggt gaa gca gga aag	224
Leu Ala Gln Leu Tyr Lys Lys Tyr Cys Leu His Gly Glu Ala Gly Lys	
5 10 15	
gaa gct gca gag aaa gtc agc tgg ata aag gac aaa ctt ctg cat att	272

Glu	Ala	Ala	Glu	Lys	Val	Ser	Trp	Ile	Lys	Asp	Lys	Leu	Leu	His	Ile		
20					25					30					35		
tat	tat	cag	aac	agc	att	gac	gac	aaa	ctg	ttg	gta	gag	aaa	atc	ttt	320	
Tyr	Tyr	Gln	Asn	Ser	Ile	Asp	Asp	Lys	Leu	Leu	Val	Glu	Lys	Ile	Phe		
			40						45					50			
gct	cag	tat	ctt	gtc	ccc	cac	aac	ctg	gaa	aca	gaa	gag	aga	atg	aaa	368	
Ala	Gln	Tyr	Leu	Val	Pro	His	Asn	Leu	Glu	Thr	Glu	Glu	Arg	Met	Lys		
			55					60					65				
tgc	tta	tat	tac	tta	tat	gct	agt	ttg	gat	cca	aat	gct	gta	aaa	gct	416	
Cys	Leu	Tyr	Tyr	Leu	Tyr	Ala	Ser	Leu	Asp	Pro	Asn	Ala	Val	Lys	Ala		
		70					75					80					
ctc	aac	gaa	atg	tgg	aag	tgt	cag	aac	atg	ctt	cgg	agc	cat	gta	cgc	464	
Leu	Asn	Glu	Met	Trp	Lys	Cys	Gln	Asn	Met	Leu	Arg	Ser	His	Val	Arg		
	85					90				95							
gaa	cta	ttg	gat	ttg	cac	aag	cag	cct	aca	tca	gag	gct	aac	tgt	tct	512	
Glu	Leu	Leu	Asp	Leu	His	Lys	Gln	Pro	Thr	Ser	Glu	Ala	Asn	Cys	Ser		
100					105					110				115			
gcc	atg	ttt	gga	aaa	ctg	atg	acc	ata	gca	aag	aat	ttg	cct	gac	ccc	560	
Ala	Met	Phe	Gly	Lys	Leu	Met	Thr	Ile	Ala	Lys	Asn	Leu	Pro	Asp	Pro		
			120						125				130				
ggg	aaa	gca	caa	gat	ttt	gtg	aag	aaa	ttt	aac	cag	gtt	ctc	ggc	gat	608	
Gly	Lys	Ala	Gln	Asp	Phe	Val	Lys	Lys	Phe	Asn	Gln	Val	Leu	Gly	Asp		
		135						140					145				
gat	gag	aaa	ctt	cgg	tct	cag	ttg	gag	tta	tta	att	agc	cca	acc	tgt	656	
Asp	Glu	Lys	Leu	Arg	Ser	Gln	Leu	Glu	Leu	Leu	Ile	Ser	Pro	Thr	Cys		
		150					155					160					
tct	tgc	aaa	caa	gca	gat	att	tgt	gtg	aga	gaa	ata	gcc	cgg	aaa	ctt	704	
Ser	Cys	Lys	Gln	Ala	Asp	Ile	Cys	Val	Arg	Glu	Ile	Ala	Arg	Lys	Leu		
	165					170				175							
gca	aat	cct	aag	caa	cca	aca	aat	cct	ttt	cta	gag	atg	gtc	aaa	ttt	752	
Ala	Asn	Pro	Lys	Gln	Pro	Thr	Asn	Pro	Phe	Leu	Glu	Met	Val	Lys	Phe		
180				185					190					195			
ctg	ttg	gaa	aga	atc	gca	cct	gtg	cac	att	gat	tca	gaa	gcc	ata	agt	800	
Leu	Leu	Glu	Arg	Ile	Ala	Pro	Val	His	Ile	Asp	Ser	Glu	Ala	Ile	Ser		
			200						205				210				
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Glu Thr Tyr Glu Ser Leu Leu Gln Cys Leu Arg Met Glu Asp Asp Lys			
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Val Ala Glu Ala Ala Ile Gln Ile Phe Arg Asn Thr Gly His Lys Ile			
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Glu Thr Asp Leu Pro Gln Ile Arg Ser Thr Leu Ile Pro Ile Leu His			
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caa aaa gca aag agg ggt act cca cac caa gca aaa cag gct gtg cac			1136
Gln Lys Ala Lys Arg Gly Thr Pro His Gln Ala Lys Gln Ala Val His			
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Cys Ile His Ala Ile Phe Thr Asn Lys Glu Val Gln Leu Ala Gln Ile			
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Phe Glu Pro Leu Ser Arg Ser Leu Asn Ala Asp Val Pro Glu Gln Leu			
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Ile Thr Pro Leu Val Ser Leu Gly His Ile Ser Met Leu Ala Pro Asp			
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cag ttt gct tcc cca atg aaa tct gta gta gca aat ttt att gtg aaa			1328
Gln Phe Ala Ser Pro Met Lys Ser Val Val Ala Asn Phe Ile Val Lys			
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Trp Ser Pro Asp Glu Glu Val Ser Pro Glu Val Leu Ala Lys Val Gln			
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Ala Ile Lys Leu Leu Val Arg Trp Leu Leu Gly Met Lys Asn Asn Gln			
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Ser Lys Ser Ala Asn Ser Thr Leu Arg Leu Leu Ser Ala Met Leu Val			
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Met Glu Asn Phe Thr Leu Ala Arg Asp Glu Lys Gly Asn Val
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Pro	Arg	Val	His	Ile	Ile	Glu	Glu	Leu	Gln	Ile	Phe	Ser	Ser	Gly	Gln	
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Pro	Val	Gln	Asn	Leu	Leu	Leu	Asp	Thr	His	Arg	Gly	Leu	Leu	Tyr	Ala	
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Leu	Ala	Cys	Pro	Leu	Leu	Ser	Asn	Leu	Ala	Thr	Arg	Leu	Trp	Leu	Arg	
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465	470	475	
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Gly Asp Leu Leu Leu Val Gly Thr Gln Gln Leu Gly Glu Phe Gln Cys			
480	485	490	
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Trp Ser Leu Glu Glu Gly Phe Gln Gln Leu Val Ala Ser Tyr Cys Pro			
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Glu Val Val Glu Asp Gly Val Ala Asp Gln Thr Asp Glu Gly Gly Ser			
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Val Pro Val Ile Ile Ser Thr Ser Arg Val Ser Ala Pro Ala Gly Gly			
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Lys Ala Ser Trp Gly Ala Asp Arg Ser Tyr Trp Lys Glu Phe Leu Val			
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Leu Tyr Arg His Arg Asn Ser Met Lys Val Phe Leu Lys Gln Gly Glu			
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Cys Ala Ser Val His Pro Lys Thr Cys Pro Val Val Leu Pro Pro Glu			
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Thr Arg Pro Leu Asn Gly Leu Gly Pro Pro Ser Thr Pro Leu Asp His			
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Arg Gly Tyr Gln Ser Leu Ser Asp Ser Pro Pro Gly Ala Arg Val Phe			
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Thr Glu Ser Glu Lys Arg Pro Leu Ser Ile Gln Asp Ser Phe Val Glu			
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cct	cct	gag	aag	ttt	gct	cta	gag	aac	ttc	act	gtc	tca	gcc	gct	aaa		679
Pro	Pro	Glu	Lys	Phe	Ala	Leu	Glu	Asn	Phe	Thr	Val	Ser	Ala	Ala	Lys		
			200					205					210				
ttt	gcg	gaa	gag	ttt	tac	agc	ttc	cga	aga	agg	aag	aca	att	ggg	ggg		727
Phe	Ala	Glu	Glu	Phe	Tyr	Ser	Phe	Arg	Arg	Arg	Lys	Thr	Ile	Gly	Gly		
		215					220					225					
aaa	tgc	cgg	gag	tac	aga	cga	cgt	cac	cgt	ata	tct	tct	ttt	cgg	cca		775
Lys	Cys	Arg	Glu	Tyr	Arg	Arg	Arg	His	Arg	Ile	Ser	Ser	Phe	Arg	Pro		
	230					235					240						
gtg	gag	gat	atc	acc	gaa	gag	gac	tta	gaa	aat	gtt	gcc	ata	act	gtt		823
Val	Glu	Asp	Ile	Thr	Glu	Glu	Asp	Leu	Glu	Asn	Val	Ala	Ile	Thr	Val		
	245				250					255					260		
cga	gat	aaa	atc	tat	gat	aaa	gtt	ctg	ggt	aac	acg	tgc	cat	cag	tgt		871
Arg	Asp	Lys	Ile	Tyr	Asp	Lys	Val	Leu	Gly	Asn	Thr	Cys	His	Gln	Cys		

265	270	275	
cga caa aag acc atc gac acc aag	aca gtg tgt cgg aac cag ggt tgc		919
Arg Gln Lys Thr Ile Asp Thr Lys	Thr Val Cys Arg Asn Gln Gly Cys		
280	285	290	
tgt ggt gtg cga gga cag ttc tgt gga cca tgc ctg cgg aac cgc tat			967
Cys Gly Val Arg Gly Gln Phe Cys Gly Pro Cys Leu Arg Asn Arg Tyr			
295	300	305	
ggg gag gat gtc aga tgc gca ttg ctg gac ccg gat tgg gtg tgt ccc			1015
Gly Glu Asp Val Arg Ser Ala Leu Leu Asp Pro Asp Trp Val Cys Pro			
310	315	320	
ccc tgt cgt ggg atc tgc aat tgc agc tac tgt cgg aag cgt gac ggc			1063
Pro Cys Arg Gly Ile Cys Asn Cys Ser Tyr Cys Arg Lys Arg Asp Gly			
325	330	335	340
cgc tgt gcc aca gga atc ctc att cat ctg gcc aag ttt tat ggt tat			1111
Arg Cys Ala Thr Gly Ile Leu Ile His Leu Ala Lys Phe Tyr Gly Tyr			
345	350	355	
gac aat gtt aag gaa tat ctg gag agc tta caa aag gag ctg gta gaa			1159
Asp Asn Val Lys Glu Tyr Leu Glu Ser Leu Gln Lys Glu Leu Val Glu			
360	365	370	
gac aat taa gagggaaa acaaacagaa ccagccacct caccatagag tactccaaca			1215
Asp Asn *			
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tcctacctct tgagtactgg gattacagtc gtgtcccaca cgctcagccc tgagttagtt			2055

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 taaccaacac agggcccagc acccgagag cagacactgc g atg aca acg gac 413
 Met Thr Thr Asp
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 gac aca gaa gtg ccc gct atg act cta gca ccg ggc cac gcc gct ctg 461
 Asp Thr Glu Val Pro Ala Met Thr Leu Ala Pro Gly His Ala Ala Leu
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 gaa act caa acg ctg agc gct gag acc tct tct agg gcc tca acc cca 509
 Glu Thr Gln Thr Leu Ser Ala Glu Thr Ser Ser Arg Ala Ser Thr Pro
 25 30 35
 gcc ggc ccc att cca gaa gca gag acc agg gga gcc aag aga att tcc 557

265	270	275	
atc aca gaa ata gaa aca acg act	tcc agc atc cct ggg gcc tca gac		1277
Ile Thr Glu Ile Glu Thr Thr Thr	Ser Ser Ile Pro Gly Ala Ser Asp		
280	285	290	
aca gat ctc atc ccc acg gaa ggg gtg aag gcc tcg tcc acc tcc gat			1325
Thr Asp Leu Ile Pro Thr Glu Gly Val Lys Ala Ser Ser Thr Ser Asp			
295	300	305	
cca cca gct ctg cct gac tcc act gaa gca aaa cca cac atc act gag			1373
Pro Pro Ala Leu Pro Asp Ser Thr Glu Ala Lys Pro His Ile Thr Glu			
310	315	320	
gtc aca gcc tct gcc gag acc ctg tcc aca gcc ggc acc aca gag tca			1421
Val Thr Ala Ser Ala Glu Thr Leu Ser Thr Ala Gly Thr Thr Glu Ser			
325	330	335	340
gct gca cct cat gcc acg gtt ggg acc cca ctc ccc act aac agc gcc			1469
Ala Ala Pro His Ala Thr Val Gly Thr Pro Leu Pro Thr Asn Ser Ala			
345	350	355	
aca gaa aga gaa gtg aca gca ccc ggg gcc acg acc ctc agt gga gct			1517
Thr Glu Arg Glu Val Thr Ala Pro Gly Ala Thr Thr Leu Ser Gly Ala			
360	365	370	
ctg gtc aca gtt agc agg aat ccc ctg gaa gaa acc tca gcc ctc tct			1565
Leu Val Thr Val Ser Arg Asn Pro Leu Glu Glu Thr Ser Ala Leu Ser			
375	380	385	
gtt gag aca cca agt tac gtc aaa gtc tca gga gca gct ccg gtc tcc			1613
Val Glu Thr Pro Ser Tyr Val Lys Val Ser Gly Ala Ala Pro Val Ser			
390	395	400	
ata gag gct ggg tca gca gtg ggc aaa aca act tcc ttt gct ggg agc			1661
Ile Glu Ala Gly Ser Ala Val Gly Lys Thr Thr Ser Phe Ala Gly Ser			
405	410	415	420
tct gct tcc tcc tac agc ccc tcg gaa gcc gcc ctc aag aac ttc acc			1709
Ser Ala Ser Ser Tyr Ser Pro Ser Glu Ala Ala Leu Lys Asn Phe Thr			
425	430	435	
cct tca gag aca ccg acc atg gac atc gca acc aag ggg ccc ttc ccc			1757
Pro Ser Glu Thr Pro Thr Met Asp Ile Ala Thr Lys Gly Pro Phe Pro			
440	445	450	
acc agc agg gac cct ctt cct tct gtc cct ccg act aca acc aac agc			1805
Thr Ser Arg Asp Pro Leu Pro Ser Val Pro Pro Thr Thr Asn Ser			
455	460	465	
agc cga ggg acg aac agc acc tta gcc aag atc aca acc tca gcg aag			1853
Ser Arg Gly Thr Asn Ser Thr Leu Ala Lys Ile Thr Thr Ser Ala Lys			
470	475	480	
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Thr Thr Met Lys Pro Pro Thr Ala Thr Pro Thr Thr Ala Arg Thr Arg			
485	490	495	500

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Pro Thr Thr Asp Val Ser Ala Gly Glu Asn Gly Gly Phe Leu Leu Leu
505 510 515

cgg ctg agt gtg gct tcc ccg gaa gac ctc act gac ccc aga gtg gca 1997
Arg Leu Ser Val Ala Ser Pro Glu Asp Leu Thr Asp Pro Arg Val Ala
520 525 530

gaa agg ctg atg cag cag ctc cac cgg gaa ctc cac gcc cac gcg cct 2045
Glu Arg Leu Met Gln Gln Leu His Arg Glu Leu His Ala His Ala Pro
535 540 545

cac ttc cag gtc tcc tta ctg cgt gtc agg aga ggc taa cggacatcag 2094
His Phe Gln Val Ser Leu Leu Arg Val Arg Arg Gly *
550 555 560

ctgcagccag gcatgtcccg tatgccaaaa gaggggtgctg cccctagcct gggccccac 2154

cgacagactg cagctgcgtt actgtgctga gaggtaccca gaagggtccc atgaagggca 2214

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gggcttgctg gcccgaagtg agttgtcagg gtttcagagg acaccagtca tggcaacccc 180

agctccatgg ctgccacaca ggcttgggct tcccaggact gcctccttct tgttcgctta 240

tgtagatgaa aaatgaggta acggcactcc cctgccccac cctcctccca gaagtgccca 300

gggtgtaaat gcaatagctt gtgtgaagtc cactggaacc caggetcacc aagtcagtct 360

taaccaacac aggccccagc acccgagag cagacactgc g atg aca acg gac 413
Met Thr Thr Asp
1

gac aca gaa gtg ccc gct atg act cta gca ccg ggc cac gcc gct ctg 461

230	235	240	
tca gct gca cct cat gcc acg gtt ggg acc cca ctc ccc act aac agc Ser Ala Ala Pro His Ala Thr Val Gly Thr Pro Leu Pro Thr Asn Ser 245 250 255 260			1181
gcc aca gaa aga gaa gtg aca gca ccc ggg gcc acg acc ctc agt gga Ala Thr Glu Arg Glu Val Thr Ala Pro Gly Ala Thr Thr Leu Ser Gly 265 270 275			1229
gct ctg gtc aca gtt agc agg aat ccc ctg gaa gaa acc tca gcc ctc Ala Leu Val Thr Val Ser Arg Asn Pro Leu Glu Glu Thr Ser Ala Leu 280 285 290			1277
tct gtt gag aca cca agt tac gtc aaa gtc tca gga gca gct ccg gtc Ser Val Glu Thr Pro Ser Tyr Val Lys Val Ser Gly Ala Ala Pro Val 295 300 305			1325
tcc ata gag gct ggg tca gca gtg ggc aaa aca act tcc ttt gct ggg Ser Ile Glu Ala Gly Ser Ala Val Gly Lys Thr Thr Ser Phe Ala Gly 310 315 320			1373
agc tct gct tcc tcc tac agc ccc tcg gaa gcc gcc ctc aag aac ttc Ser Ser Ala Ser Ser Tyr Ser Pro Ser Glu Ala Ala Leu Lys Asn Phe 325 330 335 340			1421
acc cct tca gag aca ccg acc atg gac atc gca acc aag ggg ccc ttc Thr Pro Ser Glu Thr Pro Thr Met Asp Ile Ala Thr Lys Gly Pro Phe 345 350 355			1469
ccc acc agc agg gac cct ctt cct tct gtc cct ccg act aca acc aac Pro Thr Ser Arg Asp Pro Leu Pro Ser Val Pro Pro Thr Thr Thr Asn 360 365 370			1517
agc agc cga ggg acg aac agc acc tta gcc aag atc aca acc tca gcg Ser Ser Arg Gly Thr Asn Ser Thr Leu Ala Lys Ile Thr Thr Ser Ala 375 380 385			1565
aag acc acg atg aag ccc cca aca gcc acg ccc acg act gcc cgg acg Lys Thr Thr Met Lys Pro Pro Thr Ala Thr Pro Thr Thr Ala Arg Thr 390 395 400			1613
agg ccg acc aca gac gtg agt gca ggt gaa aat gga ggt ttc ctc ctc Arg Pro Thr Thr Asp Val Ser Ala Gly Glu Asn Gly Gly Phe Leu Leu 405 410 415 420			1661
ctg cgg ctg agt gtg gct tcc ccg gaa gac ctc act gac ccc aga gtg Leu Arg Leu Ser Val Ala Ser Pro Glu Asp Leu Thr Asp Pro Arg Val 425 430 435			1709
gca gaa agg ctg atg cag cag ctc cac cgg gaa ctc cac gcc cac gcg Ala Glu Arg Leu Met Gln Gln Leu His Arg Glu Leu His Ala His Ala 440 445 450			1757
cct cac ttc cag gtc tcc tta ctg cgt gtc agg aga ggc taa cggacat Pro His Phe Gln Val Ser Leu Leu Arg Val Arg Arg Gly * 455 460 465			1806

cagctgcagc cagggcatgtc ccgtatgcca aaagaggggtg ctgcccctag cctgggcccc 1866
 caccgacaga ctgcagctgc gttactgtgc tgagaggtac ccagaagggtt cccatgaagg 1926
 gcagcatgtc caagccccta accccagatg tggcaacagg accctcgctc acatccaccg 1986
 gagtgtatgt atgggggaggg gcttcacctg ttcccagagg tgtccttggga ctcaccttgg 2046
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 atccaacaag agctagaaca ttctgggaga agcccacggt ggctccttgc cgggctggtc 300
 agactccgtg gttgtcctga gacaccacc ctctgctgcc ctgaggggtgg cccaggaaag 360
 tttgtgtgac cttccacacg gatcccttgg gac atg cag gtg tgg ctc ttg aca 414
 Met Gln Val Trp Leu Leu Thr
 1 5
 ctg gaa agg ctg agg gtt ctg ccc aaa cct agg agt gaa ttc gac ttc 462
 Leu Glu Arg Leu Arg Val Leu Pro Lys Pro Arg Ser Glu Phe Asp Phe
 10 15 20
 ttt ccc atc tca cac aca cac ccg aga cgt cac ccg aat cca cgt att 510
 Phe Pro Ile Ser His Thr His Pro Arg Arg His Pro Asn Pro Arg Ile
 25 30 35
 tcc cac gtt cgg ctg cca ctg cct ccc agg tgg gct ttg cag gac cca 558
 Ser His Val Arg Leu Pro Leu Pro Pro Arg Trp Ala Leu Gln Asp Pro
 40 45 50 55
 cca tcg cat ccc ctc tca ctc cac aga aaa ctc gtg ggg ccg tgt tcc 606
 Pro Ser His Pro Leu Ser Leu His Arg Lys Leu Val Gly Pro Cys Ser
 60 65 70
 ccc tgc cac tga ccacgctttc cttgcaga 636

Pro Cys His *
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gtggcccaag caaaacacat ctggaggcca gattgaatcc acaggctgaa agcagtcaac      300
caggcctgat gtc      atg acc ctg tat cct ctc cac tgg cag gaa gag atg      349
                  Met Thr Leu Tyr Pro Leu His Trp Gln Glu Glu Met
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tca gga gaa agt gtg gtg agc tca gcg gtg cca gcg gct gct acc cgc      397
Ser Gly Glu Ser Val Val Ser Ser Ala Val Pro Ala Ala Ala Thr Arg
                   15              20              25

acc act tcc ttc aag ggc acg agc ccc agc tcc aaa tac gtg aag ctg      445
Thr Thr Ser Phe Lys Gly Thr Ser Pro Ser Ser Lys Tyr Val Lys Leu
                   30              35              40

aat gtg ggt gga gcc ctc tac tat acc acc atg cag acg ctg acc aag      493
Asn Val Gly Gly Ala Leu Tyr Tyr Thr Thr Met Gln Thr Leu Thr Lys
                   45              50              55              60

cag gac acc atg ctg aag gcc atg ttc agc ggg cgc atg gaa gtg ctc      541
Gln Asp Thr Met Leu Lys Ala Met Phe Ser Gly Arg Met Glu Val Leu
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acc gac agt gaa ggc tgg atc ctc att gac cgc tgt ggg aag cac ttt      589
Thr Asp Ser Glu Gly Trp Ile Leu Ile Asp Arg Cys Gly Lys His Phe
                   80              85              90

ggt acg ata ctc aac tac ctt cga gac ggg gcg gtg cct tta ccc gag      637
Gly Thr Ile Leu Asn Tyr Leu Arg Asp Gly Ala Val Pro Leu Pro Glu
                   95              100              105

agc cgc cgg gag atc gag gag ctg cta gca gaa gcc aag tac tac cta      685
Ser Arg Arg Glu Ile Glu Glu Leu Leu Ala Glu Ala Lys Tyr Tyr Leu
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125	130	135	140
act tat gag cct ttc tgc aag gtc cct gtg atc acc tca tcc aag gaa			781
Thr Tyr Glu Pro Phe Cys Lys Val Pro Val Ile Thr Ser Ser Lys Glu			
	145	150	155
gaa caa aaa ctt ata gcg act tca aat aag cca gcc gtg aag ttg ctc			829
Glu Gln Lys Leu Ile Ala Thr Ser Asn Lys Pro Ala Val Lys Leu Leu			
	160	165	170
tac aac aga agt aac aac aaa tac tca tat acc agc aat tct gac gac			877
Tyr Asn Arg Ser Asn Asn Lys Tyr Ser Tyr Thr Ser Asn Ser Asp Asp			
	175	180	185
aat atg ttg aaa aac att gaa ctg ttt gat aag ctg tct ctg cgc ttt			925
Asn Met Leu Lys Asn Ile Glu Leu Phe Asp Lys Leu Ser Leu Arg Phe			
	190	195	200
aac gga agg gtc ctg ttc ata aag gat gtt att ggg gat gaa atc tgc			973
Asn Gly Arg Val Leu Phe Ile Lys Asp Val Ile Gly Asp Glu Ile Cys			
205	210	215	220
tgc tgg tcc ttt tat ggt cag ggc cgg aag att gct gaa gtc tgt tgt			1021
Cys Trp Ser Phe Tyr Gly Gln Gly Arg Lys Ile Ala Glu Val Cys Cys			
	225	230	235
acc tcc atc gtc tat gcc act gag aag aaa cag acc aag gtg gag ttt			1069
Thr Ser Ile Val Tyr Ala Thr Glu Lys Lys Gln Thr Lys Val Glu Phe			
	240	245	250
ccc gaa gcc cgg att tat gag gag acc ctg aac att ttg ctg tat gag			1117
Pro Glu Ala Arg Ile Tyr Glu Glu Thr Leu Asn Ile Leu Leu Tyr Glu			
	255	260	265
gcc cag gat ggc cgg gga cct gac aat gcg ctc ctg gag gcc aca ggc			1165
Ala Gln Asp Gly Arg Gly Pro Asp Asn Ala Leu Leu Glu Ala Thr Gly			
	270	275	280
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Gly Ala Ala Gly Arg Ser His His Leu Asp Glu Asp Glu Glu Arg Glu			
285	290	295	300
cgg atc gag cgc gtg cgg agg atc cac atc aag cgc cct gat gac cgg			1261
Arg Ile Glu Arg Val Arg Arg Ile His Ile Lys Arg Pro Asp Asp Arg			
	305	310	315
gcc cac ctc cac cag tga gcaggc aagagaccga gccgccctcc tctcaccgcc			1315
Ala His Leu His Gln *			
	320		
cccactccct gccgtgctac acccagatcc tgtgcaggct gccggggccc ttctgcttcc			1375
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<213> Homo sapiens

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<221> CDS

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<400> 14

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tgagagccta gaggccttaa aaaaaaaagt gcttgaaaga gaaggggaca aaggaacacc      240
agtattaaga ggattttcca gtgtttctgg cagttgggtcc agaagg  atg cct cca      295
                                     Met Pro Pro
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ttc ctg ctt ctc acc tgc ctc ttc atc aca ggc acc tcc gtg tca ccc      343
Phe Leu Leu Leu Thr Cys Leu Phe Ile Thr Gly Thr Ser Val Ser Pro
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gtg gcc cta gat cct tgt tct gct tac atc agc ctg aat gag ccc tgg      391
Val Ala Leu Asp Pro Cys Ser Ala Tyr Ile Ser Leu Asn Glu Pro Trp
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agg aac act gac cac cag ttg gat gag tct caa ggt cct cct cta tgt      439
Arg Asn Thr Asp His Gln Leu Asp Glu Ser Gln Gly Pro Pro Leu Cys
                        40                      45                      50

gac aac cat gtg aat ggg gag tgg tac cac ttc acg ggc atg gcg gga      487
Asp Asn His Val Asn Gly Glu Trp Tyr His Phe Thr Gly Met Ala Gly
                        55                      60                      65

gat gcc atg cct acc ttc tgc ata cca gaa aac cac tgt gga acc cac      535
Asp Ala Met Pro Thr Phe Cys Ile Pro Glu Asn His Cys Gly Thr His
      70                      75                      80

gca cct gtc tgg ctc aat ggc agc cac ccc cta gaa ggc gac ggc att      583
Ala Pro Val Trp Leu Asn Gly Ser His Pro Leu Glu Gly Asp Gly Ile
      85                      90                      95

gtg caa cgc cag gct tgt gcc agc ttc aat ggg aac tgc tgt ctc tgg      631
Val Gln Arg Gln Ala Cys Ala Ser Phe Asn Gly Asn Cys Cys Leu Trp
      100                      105                      110                      115

aac acc acg gtg gaa gtc aag gct tgc cct gga ggc tac tat gtg tat      679
Asn Thr Thr Val Glu Val Lys Ala Cys Pro Gly Gly Tyr Tyr Val Tyr
                        120                      125                      130

cgt ctg acc aag ccc agc gtc tgc ttc cac gtc tac tgt ggt cat ttt      727
Arg Leu Thr Lys Pro Ser Val Cys Phe His Val Tyr Cys Gly His Phe
                        135                      140                      145

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Tyr Asp Ile Cys Asp Glu Asp Cys His Gly Ser Cys Ser Asp Thr Ser
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Glu Cys Thr Cys Ala Pro Gly Thr Val Leu Gly Pro Asp Arg Gln Thr			
165	170	175	
tgc ttt gat gaa aat gaa tgt gag caa aac aac ggt ggc tgc agt gag			871
Cys Phe Asp Glu Asn Glu Cys Glu Gln Asn Asn Gly Gly Cys Ser Glu			
180	185	190	195
atc tgt gtg aac ctc aaa aac tcc tac cgc tgt gag tgt ggg gtt ggc			919
Ile Cys Val Asn Leu Lys Asn Ser Tyr Arg Cys Glu Cys Gly Val Gly			
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cgt gtg cta aga agt gat ggc aag act tgt gaa gac gtt gaa gga tgc			967
Arg Val Leu Arg Ser Asp Gly Lys Thr Cys Glu Asp Val Glu Gly Cys			
	215	220	225
cac aat aac aat ggt ggc tgc agc cac tct tgc ctt gga tct gag aaa			1015
His Asn Asn Asn Gly Gly Cys Ser His Ser Cys Leu Gly Ser Glu Lys			
	230	235	240
ggc tac cag tgt gaa tgt ccc cgg ggc ctg gtg ctg tct gag gat aac			1063
Gly Tyr Gln Cys Glu Cys Pro Arg Gly Leu Val Leu Ser Glu Asp Asn			
	245	250	255
cac act tgc caa gtc cct gtg ttg tgc aaa tca aat gcc att gaa gtg			1111
His Thr Cys Gln Val Pro Val Leu Cys Lys Ser Asn Ala Ile Glu Val			
	260	265	270
aac atc ccc agg gag ctg gtt ggt ggc ctg gag ctc ttc ctg acc aac			1159
Asn Ile Pro Arg Glu Leu Val Gly Gly Leu Glu Leu Phe Leu Thr Asn			
	280	285	290
acc tcc tgc cga gga gtg tcc aac ggc acc cat gtc aac atc ctc ttc			1207
Thr Ser Cys Arg Gly Val Ser Asn Gly Thr His Val Asn Ile Leu Phe			
	295	300	305
tct ctc aag aca tgt ggt aca gtg gtc gat gtg gtg aat gac aag att			1255
Ser Leu Lys Thr Cys Gly Thr Val Val Asp Val Val Asn Asp Lys Ile			
	310	315	320
gtg gcc agc aac ctc gtg aca ggt cta ccc aag cag acc ccg ggg agc			1303
Val Ala Ser Asn Leu Val Thr Gly Leu Pro Lys Gln Thr Pro Gly Ser			
	325	330	335
agc ggg gac ttc atc atc cga acc agc aag ctg ctg atc ccg gtg acc			1351
Ser Gly Asp Phe Ile Ile Arg Thr Ser Lys Leu Leu Ile Pro Val Thr			
	340	345	350
tgc gag ttt cca cgc ctg tac acc att tct gaa gga tac gtt ccc aac			1399
Cys Glu Phe Pro Arg Leu Tyr Thr Ile Ser Glu Gly Tyr Val Pro Asn			
	360	365	370
ctt cga aac tcc cca ctg gaa atc atg agc cga aat cat ggg atc ttc			1447
Leu Arg Asn Ser Pro Leu Glu Ile Met Ser Arg Asn His Gly Ile Phe			
	375	380	385

cca ttc act ctg gag atc ttc aag gac aat gag ttt gaa gag cct tac	1495
Pro Phe Thr Leu Glu Ile Phe Lys Asp Asn Glu Phe Glu Glu Pro Tyr	
390 395 400	
cgg gaa gct ctg ccc acc ctc aag ctt cgt gac tcc ctc tac ttt ggc	1543
Arg Glu Ala Leu Pro Thr Leu Lys Leu Arg Asp Ser Leu Tyr Phe Gly	
405 410 415	
att gag ccc gtg gtg cac gtg agc ggc ttg gaa agc ttg gtg gag agc	1591
Ile Glu Pro Val Val His Val Ser Gly Leu Glu Ser Leu Val Glu Ser	
420 425 430 435	
tgc ttt gcc acc ccc acc tcc aag atc gac gag gtc ctg aaa tac tac	1639
Cys Phe Ala Thr Pro Thr Ser Lys Ile Asp Glu Val Leu Lys Tyr Tyr	
440 445 450	
ctc atc cgg gat ggc tgt gtt tca gat gac tcg gta aag cag tac aca	1687
Leu Ile Arg Asp Gly Cys Val Ser Asp Asp Ser Val Lys Gln Tyr Thr	
455 460 465	
tcc cgg gat cac cta gca aag cac ttc cag gtc cct gtc ttc aag ttt	1735
Ser Arg Asp His Leu Ala Lys His Phe Gln Val Pro Val Phe Lys Phe	
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Val Gly Lys Asp His Lys Glu Val Phe Leu His Cys Arg Val Leu Val	
485 490 495	
tgt gga gtg ttg gac gag cgt tcc cgc tgt gcc cag ggt tgc cac cgg	1831
Cys Gly Val Leu Asp Glu Arg Ser Arg Cys Ala Gln Gly Cys His Arg	
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cga atg cgt cgt ggg gca gga gga gag gac tca gcc ggt cta cag ggc	1879
Arg Met Arg Arg Gly Ala Gly Gly Glu Asp Ser Ala Gly Leu Gln Gly	
520 525 530	
cag acg cta aca ggc ggc ccg atc cgc atc gac tgg gag gac tag ttc	1927
Gln Thr Leu Thr Gly Gly Pro Ile Arg Ile Asp Trp Glu Asp *	
535 540 545	
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ttaaacagtt actgaaatta tgacttaaata acccaatgac tccttaaata tgtaaattat	2347
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2444

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<213> Homo sapiens

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gggttgaggc tgcctgaccc cagcctaata gggtaggtag gccttgggaa gtggagc 117

atg ggg gca aag gat cca agc att gag cct tca tcc tct att ccc cat 165

Met Gly Ala Lys Asp Pro Ser Ile Glu Pro Ser Ser Ser Ile Pro His
1 5 10 15

cca gtg ggg tgc cga ggc tca ggc agc atg acg acg gag acc ttt gtg 213

Pro Val Gly Cys Arg Gly Ser Gly Ser Met Thr Thr Glu Thr Phe Val
20 25 30

aag gat atc aag cct ggg ctc aag aat ctg aac ctt atc ttc att gtg 261

Lys Asp Ile Lys Pro Gly Leu Lys Asn Leu Asn Leu Ile Phe Ile Val
35 40 45

ctg gag aca ggc cga gtg acc aag aca aag gac ggg cat gag gtt cgg 309

Leu Glu Thr Gly Arg Val Thr Lys Thr Lys Asp Gly His Glu Val Arg
50 55 60

acc tgc aaa gtg gcg gac aaa aca ggc agc atc aat atc tct gtc tgg 357

Thr Cys Lys Val Ala Asp Lys Thr Gly Ser Ile Asn Ile Ser Val Trp
65 70 75 80

gac gat gtt ggc aat ctg atc cag cct ggg gac att atc cgg ctc acc 405

Asp Asp Val Gly Asn Leu Ile Gln Pro Gly Asp Ile Ile Arg Leu Thr
85 90 95

aaa ggg tac gct tca gtt ttc aaa ggt tgt ctg aca cta tat act ggc 453

Lys Gly Tyr Ala Ser Val Phe Lys Gly Cys Leu Thr Leu Tyr Thr Gly
100 105 110

cgt ggg ggt gat ctg cag aag att gga gaa ttc tgt atg gtt tat tct 501

Arg Gly Gly Asp Leu Gln Lys Ile Gly Glu Phe Cys Met Val Tyr Ser
115 120 125

gag gtt cct aac ttc agt gag cca aac cca gag tac agc acc cag cag 549

Glu Val Pro Asn Phe Ser Glu Pro Asn Pro Glu Tyr Ser Thr Gln Gln
130 135 140

gca ccc aac aag gcg gtg cag aac gac agc aac cct tca gct tcc cag 597

Ala Pro Asn Lys Ala Val Gln Asn Asp Ser Asn Pro Ser Ala Ser Gln
145 150 155 160

cct acc act gga ccc tct gct gcc tct cca gcc tct gag aac cag aat	645
Pro Thr Thr Gly Pro Ser Ala Ala Ser Pro Ala Ser Glu Asn Gln Asn	
165 170 175	
ggg aat gga ctg agt gcc cca cca ggt ccc ggt ggt ggc cca cat ccc	693
Gly Asn Gly Leu Ser Ala Pro Pro Gly Pro Gly Gly Gly Pro His Pro	
180 185 190	
cct cat act ccc tcc cac cca ccc agc acc cga atc act cga agc cag	741
Pro His Thr Pro Ser His Pro Pro Ser Thr Arg Ile Thr Arg Ser Gln	
195 200 205	
ccc aac cac aca cct gca ggc cgg cct ggc cct ttc agc aac cct gtt	789
Pro Asn His Thr Pro Ala Gly Pro Pro Gly Pro Phe Ser Asn Pro Val	
210 215 220	
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Ser Asn Gly Lys Glu Thr Arg Arg Ser Ser Lys Arg *	
225 230 235	
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 <213> Homo sapiens

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cccatatccc atttcagct gcaaattact gcagaatctg aaccaggaa agaaacccat	180
ttgccgaccc cctcttccct ctccagacag gtggagagcg ggtgagggtc tcgctcggct	240
ttccccctgc acctttccca cctctccgcc cgtccctggg ggtcctccgt caccgcggcc	300
atg gcc cag aag ccg aag gtg gac ccc cac gtc ggg cgg ctg gga tac	348
Met Ala Gln Lys Pro Lys Val Asp Pro His Val Gly Arg Leu Gly Tyr	
1 5 10 15	
ctg cag gcg ctg gtc acg gaa ttc cag gag acc caa agc caa gac gcc	396
Leu Gln Ala Leu Val Thr Glu Phe Gln Glu Thr Gln Ser Gln Asp Ala	
20 25 30	
aag gag caa gtc ctc gcc aac ctc gcc aac ttc gct tat gac ccc agc	444
Lys Glu Gln Val Leu Ala Asn Leu Ala Asn Phe Ala Tyr Asp Pro Ser	
35 40 45	
aac tac gag tat ctg cgg cag ctg cag gtc ctg gat tta ttt ctc gat	492
Asn Tyr Glu Tyr Leu Arg Gln Leu Gln Val Leu Asp Leu Phe Leu Asp	
50 55 60	
tcg ctg tcg gag gag aat gag acc ctg gtg gag ttt gct att gga ggc	540
Ser Leu Ser Glu Glu Asn Glu Thr Leu Val Glu Phe Ala Ile Gly Gly	
65 70 75 80	
ctg tgc aac ctg tgc cca gac agg gcc aac aag gag cac atc ctg cac	588
Leu Cys Asn Leu Cys Pro Asp Arg Ala Asn Lys Glu His Ile Leu His	
85 90 95	
gca gga ggt gtc cca ctc atc atc aac tgc cta tcc agc ccc aat gag	636
Ala Gly Gly Val Pro Leu Ile Ile Asn Cys Leu Ser Ser Pro Asn Glu	
100 105 110	
gag acg gtg ctg tct gcc atc acc acg ctc atg cac ctg agc ccg ccg	684
Glu Thr Val Leu Ser Ala Ile Thr Thr Leu Met His Leu Ser Pro Pro	
115 120 125	
ggc cgc agc ttt ctc cca gag ctg acc gcc acg ccc gtg gtg cag tgc	732
Gly Arg Ser Phe Leu Pro Glu Leu Thr Ala Thr Pro Val Val Gln Cys	
130 135 140	
atg ctt cgc ttc tcc ctc tcg gcc agc gcc agg ctc cgg aac ctg gca	780
Met Leu Arg Phe Ser Leu Ser Ala Ser Ala Arg Leu Arg Asn Leu Ala	
145 150 155 160	
cag atc ttc ctg gag gac ttc tgc tcc ccc cgc cag gtg gcc gag gcc	828
Gln Ile Phe Leu Glu Asp Phe Cys Ser Pro Arg Gln Val Ala Glu Ala	
165 170 175	
cgc agc cgg cag gcg cac tct gcc ctg ggt atc cca ctg ccg agg agc	876
Arg Ser Arg Gln Ala His Ser Ala Leu Gly Ile Pro Leu Pro Arg Ser	
180 185 190	

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 Val Ala Pro Arg Gln Arg *
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<400> 17

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ccgggaaccg ttccccgggcc gttgatcttc ggccccacac gcagagaggg gcagcagg	118
atg aat gtg ggc aca gcg cac agc gag gtg aac ccc aac acg cgg gtg	166
Met Asn Val Gly Thr Ala His Ser Glu Val Asn Pro Asn Thr Arg Val	
1 5 10 15	
atg aac agc cgt ggc atc tgg ctc tcc tac gtg ctg gcc atc ggt ctc	214
Met Asn Ser Arg Gly Ile Trp Leu Ser Tyr Val Leu Ala Ile Gly Leu	
20 25 30	
ctc cac atc gtg ctg ctg agc atc ccg ttt gtg agt gtc cct gtc gtc	262
Leu His Ile Val Leu Leu Ser Ile Pro Phe Val Ser Val Pro Val Val	
35 40 45	
tgg acc ctc acc aac ctc att cac aac atg ggc atg tat atc ttc ctg	310
Trp Thr Leu Thr Asn Leu Ile His Asn Met Gly Met Tyr Ile Phe Leu	
50 55 60	
cac acg gtg aag ggg aca ccc ttt gag acc ccg gac cag ggc aag gcg	358
His Thr Val Lys Gly Thr Pro Phe Glu Thr Pro Asp Gln Gly Lys Ala	
65 70 75 80	
agg ctg cta acc cac tgg gag cag atg gat tat ggg gtc cag ttc acg	406
Arg Leu Leu Thr His Trp Glu Gln Met Asp Tyr Gly Val Gln Phe Thr	
85 90 95	
gcc tct cgg aag ttc ttg acc atc aca ccc atc gtg ctg tac ttc ctc	454
Ala Ser Arg Lys Phe Leu Thr Ile Thr Pro Ile Val Leu Tyr Phe Leu	
100 105 110	
acc agc ttc tac act aag tac gac cag atc cat ttt gtg ctc aac acc	502
Thr Ser Phe Tyr Thr Lys Tyr Asp Gln Ile His Phe Val Leu Asn Thr	
115 120 125	
gtg tcc ctg atg agc gtg ctt atc ccc aag ctg ccc cag ctc cac gga	550
Val Ser Leu Met Ser Val Leu Ile Pro Lys Leu Pro Gln Leu His Gly	
130 135 140	
gtc cgg att ttt gga atc aat aag tac tga g agtgcagccc cttccccctgc	601
Val Arg Ile Phe Gly Ile Asn Lys Tyr *	
145 150	
ccaggggtggc aggggagggg tagggtaaaa ggcattgtgct gcaacactga agacagaaag	661
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 gggaactttc accttaaaat ctttctaagc aaagtgtgaa taggattttt actccctttg 2041
 tacagtattc tgagaaacgc aaataaaagg gcaacatggt tctgttaaaa aaaaaaaaa 2099

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 gctggtaact ttggcgctc cgccaagccc tgccagactc ccctggctgt gatggcattc 180
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gccttccctg tccactgggc tggattcatg ttcaaaccac tggactggca gggcaacgac 300

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gcatgagcca tgtgtcttctt tgcccttctc tgtcctgttc caatcttctg cctcccagtc 420

actccctggg gactatggga tcaactgtccc cccacctgtg tggccacacc atgtgtcctg 480

tcaatccaga actgcctctg agctccaggc tgaccacaga tcagccacag cctg atg 537
Met
1

cct gca gcc cca ctt tgc tca ccc ttc ccc tcc cct cct cct tcc ttc 585
Pro Ala Ala Pro Leu Cys Ser Pro Phe Pro Ser Pro Pro Pro Ser Phe
5 10 15

cac aca gca agc cta cct ttc tcc atc cat gct cac cat agc ccc ctt 633
His Thr Ala Ser Leu Pro Phe Ser Ile His Ala His His Ser Pro Leu
20 25 30

cct tgt gac ttg gac cct cca ttg tac ctg gct gag act gtc agc ctc 681
Pro Cys Asp Leu Asp Pro Pro Leu Tyr Leu Ala Glu Thr Val Ser Leu
35 40 45

ctg gag gag tgg ggt cca cct tct tct tgc cct atg cag tgc aag ctc 729
Leu Glu Glu Trp Gly Pro Pro Ser Ser Cys Pro Met Gln Cys Lys Leu
50 55 60 65

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Thr Ser His Pro Ala Arg Leu Thr His Leu Pro Pro Cys Leu Trp Gly
70 75 80

ttt gct gtt gcc ctg aaa cct agc tgg gct ggt ctt gct ccc agc ttg 825
Phe Ala Val Ala Leu Lys Pro Ser Trp Ala Gly Leu Ala Pro Ser Leu
85 90 95

ctt ccc cct cct cgg atg tcc ctt tgc agg ccc ctg tcg ttc ctc cgg 873
Leu Pro Pro Pro Arg Met Ser Leu Cys Arg Pro Leu Ser Phe Leu Arg
100 105 110

cac cag tgt cct tgg ctg cca tgg caa gct cat cag ggg ctt gta ccc 921
His Gln Cys Pro Trp Leu Pro Trp Gln Ala His Gln Gly Leu Val Pro
115 120 125

tgg tca cca agc atg gta gca gct gcc tgc att gta tct cca tct ggt 969
Trp Ser Pro Ser Met Val Ala Ala Ala Cys Ile Val Ser Pro Ser Gly
130 135 140 145

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His Cys Arg Cys Gln Pro Phe Ile Pro His Val Phe Leu Gly His Gly
150 155 160

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Gly Leu Thr Ser Val Ser Gly Glu Cys Gly *
165 170

accccagggtg ctctttccat ggtggtgcct gctcatcttg ctgatgcaaa ctaggaagtt 1128

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tagttccttc ttgtcgcttt tcccagcaa atg gcg gat gac gcc ggt gca gcg 233
Met Ala Asp Asp Ala Gly Ala Ala
1 5

ggg ggg ccc ggg ggc cct ggt ggc cct ggg atg ggg aac cgc ggt ggc 281
Gly Gly Pro Gly Gly Pro Gly Gly Pro Gly Met Gly Asn Arg Gly Gly
10 15 20

ttc cgc gga ggt ttc ggc agt ggc atc cgg ggc cgg ggt cgc ggc cgt 329
Phe Arg Gly Gly Phe Gly Ser Gly Ile Arg Gly Arg Gly Arg Gly Arg
25 30 35 40

gga cgg ggc cgg ggc cga ggc cgc gga gct cgc gga ggc aag gcc gag 377
Gly Arg Gly Arg Gly Arg Gly Arg Gly Ala Arg Gly Gly Lys Ala Glu
45 50 55

gat aag gag tgg atg ccc gtc acc aag ttg ggc cgc ttg gtc aag gac 425
Asp Lys Glu Trp Met Pro Val Thr Lys Leu Gly Arg Leu Val Lys Asp
60 65 70

atg aag atc aag tcc ctg gag gag atc tat ctc ttc tcc ctg ccc att 473

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Lys	Glu	Ser	Glu	Ile	Ile	Asp	Phe	Phe	Leu	Gly	Ala	Ser	Leu	Lys	Asp		
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gag	gtt	ttg	aag	att	atg	cca	gtg	cag	aag	cag	acc	cgt	gcc	ggc	cag	569	
Glu	Val	Leu	Lys	Ile	Met	Pro	Val	Gln	Lys	Gln	Thr	Arg	Ala	Gly	Gln		
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cgc	acc	agg	ttc	aag	gca	ttt	gtt	gct	atc	ggg	gac	tac	aat	ggc	cac	617	
Arg	Thr	Arg	Phe	Lys	Ala	Phe	Val	Ala	Ile	Gly	Asp	Tyr	Asn	Gly	His		
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gtc	ggc	ctg	ggc	gtt	aag	tgc	tcc	aag	gag	gtg	gcc	acc	gcc	atc	cgt	665	
Val	Gly	Leu	Gly	Val	Lys	Cys	Ser	Lys	Glu	Val	Ala	Thr	Ala	Ile	Arg		
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Gly	Ala	Ile	Ile	Leu	Ala	Lys	Leu	Ser	Ile	Val	Pro	Val	Arg	Arg	Gly		
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Thr	Ala	Trp	Gly	His	His	Pro	Gly	Gln	Ala	Leu	His	Arg	Pro	Arg	Ala		
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cag	agg	cta	ctg	ggg	gaa	caa	gat	cgg	caa	gcc	cca	cac	tgt	cac	ctt	857	
Gln	Arg	Leu	Leu	Gly	Glu	Gln	Asp	Arg	Gln	Ala	Pro	His	Cys	His	Leu		
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Ala	His	Gly	Asp	Asp	Gly	Glu	Leu	Gly	Gln	Asp	Asp	Gly	Pro	Thr	Asp		
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Gly	Gly	Gly	His	Leu	Leu	Gly	Ala	Leu	Asn	Thr	Gln	Thr	Asp	Val	Ala		
		250				255					260						
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Ile	Val	Val	Pro	Asp	Ser	Asn	Lys	Cys	Leu	Glu	Pro	Gly	Ala	Leu	Ala		
265					270					275					280		
ggc	acg	ggc	ctg	ctt	ctg	cac	tgg	cat	aat	ctt	caa	aac	ctc	atc	ctt	1097	
Gly	Thr	Gly	Leu	Leu	Leu	His	Trp	His	Asn	Leu	Gln	Asn	Leu	Ile	Leu		
				285					290					295			
gag	aga	ggg	cac	cac	aca	gtg	aac	gaa	agt	caa	atg	agt	gct	gct	gat	1145	
Glu	Arg	Gly	His	His	Thr	Val	Asn	Glu	Ser	Gln	Met	Ser	Ala	Ala	Asp		

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			Met
			1
acg aac gtg tac tcc ttg gat ggg att ctg gtg ttt ggt ttg ctc ttt			164
Thr Asn Val Tyr Ser Leu Asp Gly Ile Leu Val Phe Gly Leu Leu Phe			
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gtt tgc acc tgt gcc tac ttc aag aaa gta cct cgt ctc aaa acc tgg			212
Val Cys Thr Cys Ala Tyr Phe Lys Lys Val Pro Arg Leu Lys Thr Trp			
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ctg cta tca gag aag aag ggt gtt tgg ggt gtg ttt tac aaa gcc gct			260
Leu Leu Ser Glu Lys Lys Gly Val Trp Gly Val Phe Tyr Lys Ala Ala			
35 40 45			
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Val Ile Gly Thr Arg Leu His Ala Ala Val Ala Ile Ala Cys Val Val			
50 55 60 65			
atg gcc ttt tac gtc ctg ttt ata aaa tga a ttccaaagca cccaagtcac			359
Met Ala Phe Tyr Val Leu Phe Ile Lys *			
70 75			
caactgccaa ccaaggggac ggggatgaag aacctgttgg agacctgaac ccagtgtagg			419


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agagttcagc tgaaatcatc ggtccccagg atgacaccac agcatctgcc cctgctatat 479
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ttcctttgat ctatgtgtaa atcagtcctt ggcagagtgc atataatgtc cggataaatt 599
acaccctcgt gtgataagat tacatacctc cttcataaaa acctgtcatc ctgtttgttc 659
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Met Gly Lys Val
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aag gtc gga gtc aac gga ttt ggt cgt att ggg cgc ctg gtc acc agg 162
Lys Val Gly Val Asn Phe Gly Arg Ile Gly Arg Leu Val Thr Arg
5 10 15 20
gct gct ttt aac tct ggt aaa gtg gat att gtt gcc atc aat gac ccc 210
Ala Ala Phe Asn Ser Gly Lys Val Asp Ile Val Ala Ile Asn Asp Pro
25 30 35
ttc att gac ctc aac tac atg gtt tac atg ttc caa tat gat tcc acc 258
Phe Ile Asp Leu Asn Tyr Met Val Tyr Met Phe Gln Tyr Asp Ser Thr
40 45 50
cat ggc aaa ttc cat ggc acc gtc aag gct gag aac ggg aag ctt gtc 306
His Gly Lys Phe His Gly Thr Val Lys Ala Glu Asn Gly Lys Leu Val
55 60 65
atc aat gga aat ccc atc acc atc ttc cag gag cga gat ccc tcc aaa 354
Ile Asn Gly Asn Pro Ile Thr Ile Phe Gln Glu Arg Asp Pro Ser Lys
70 75 80

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Val Phe Thr Thr Met Glu Lys Ala Gly Ala His Leu Gln Gly Gly Ala	
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aaa agg gtc atc atc tct gcc ccc tct gct gat gcc ccc atg ttc gtc	498
Lys Arg Val Ile Ile Ser Ala Pro Ser Ala Asp Ala Pro Met Phe Val	
120 125 130	
atg ggt gtg aac cat gag aag tat gac aac agc ctc aag atc atc agc	546
Met Gly Val Asn His Glu Lys Tyr Asp Asn Ser Leu Lys Ile Ile Ser	
135 140 145	
aat gcc tcc tgc acc acc aac tgc tta gca ccc ctg gcc aag gtc atc	594
Asn Ala Ser Cys Thr Thr Asn Cys Leu Ala Pro Leu Ala Lys Val Ile	
150 155 160	
cat gac aac ttt ggt atc gtg gaa gga ctc atg acc aca gtc cat gcc	642
His Asp Asn Phe Gly Ile Val Glu Gly Leu Met Thr Thr Val His Ala	
165 170 175 180	
atc act gcc acc cag aag act gtg gga tgg ccc ctt ccg gga aac tgt	690
Ile Thr Ala Thr Gln Lys Thr Val Gly Trp Pro Leu Pro Gly Asn Cys	
185 190 195	
ggc gtg atg gcc gcg ggg gcg tct gcc aga aac atc atc cct gcc tct	738
Gly Val Met Ala Ala Gly Ala Ser Ala Arg Asn Ile Ile Pro Ala Ser	
200 205 210	
act ggc gct gcc aag gct gtg ggc aag gtc atc cct gag ctg aac ggg	786
Thr Gly Ala Ala Lys Ala Val Gly Lys Val Ile Pro Glu Leu Asn Gly	
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Lys Leu Thr Gly Met Ala Phe Arg Val Pro Thr Ala Asn Val Ser Val	
230 235 240	
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Val Asp Leu Thr Cys Arg Leu Glu Lys Pro Ala Lys Tyr Asp Asp Ile	
245 250 255 260	
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Lys Lys Val Val Lys Gln Ala Ser Glu Gly Pro Leu Lys Gly Ile Leu	
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Gly Tyr Thr Glu His Gln Val Val Ser Ser Asp Phe Asn Ser Asp Thr	
280 285 290	
cac tcc tcc acc ttt gac gct ggg gct ggc att gcc ctc aac gac cac	1026
His Ser Ser Thr Phe Asp Ala Gly Ala Gly Ile Ala Leu Asn Asp His	
295 300 305	
ttt gtc aag ctc att tcc tgg tat gac aac gaa ttt ggc tac agc aac	1074

Phe Val Lys Leu Ile Ser Trp Tyr Asp Asn Glu Phe Gly Tyr Ser Asn	
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Arg Val Val Asp Leu Met Ala His Met Ala Ser Lys Glu *	
325 330 335	
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gctccagtcg gtggaaagaa aaggcagaga cgttgcagag gccaggtctg ctcaggggaa	180
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gagccacaca ccgctccac ctgcatttcc tctaccgact cgccagccca a atg ccg	537
	Met Pro
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ctc ttc act ctg gcc tcg ctg agc ggc tgc ccg agg agg agc tct agg	585
Leu Phe Thr Leu Ala Ser Leu Ser Gly Cys Pro Arg Arg Ser Ser Arg	
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ccg acg ccc acc gca ggc ctt aca gtc ttc tct gga cgc tcc ctt gca	633
Pro Thr Pro Thr Ala Gly Leu Thr Val Phe Ser Gly Arg Ser Leu Ala	
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gat gca ccg tgg cct ggc ggc gag ccc ccg gtc acc ttc ctc cgc acg	681

Asp Ala Pro Trp Pro Gly Gly Glu Pro Pro Val Thr Phe Leu Arg Thr
 35 40 45 50

gaa gag ggg ccg gac gcc acc ttc ccc agg acc att ccc ctg atc caa 729
 Glu Glu Gly Pro Asp Ala Thr Phe Pro Arg Thr Ile Pro Leu Ile Gln
 55 60 65

cag ttg cta aac gcc acg gag ctc acg cag gac ccg gcc gcc tac tcc 777
 Gln Leu Leu Asn Ala Thr Glu Leu Thr Gln Asp Pro Ala Ala Tyr Ser
 70 75 80

cag ctg gtg gcc gtg ctg gtc tac acc gcc gag cgg gcc aag ttc gcc 825
 Gln Leu Val Ala Val Leu Val Tyr Thr Ala Glu Arg Ala Lys Phe Ala
 85 90 95

acc ggg gta gag cgg cag gac tgg atg gag ctg ttc att gac acc ttt 873
 Thr Gly Val Glu Arg Gln Asp Trp Met Glu Leu Phe Ile Asp Thr Phe
 100 105 110

aag ctg gtg cac agg gac atc gtg ggg gac ccc gag acc gcg ctg gcc 921
 Lys Leu Val His Arg Asp Ile Val Gly Asp Pro Glu Thr Ala Leu Ala
 115 120 125 130

ctc tgc taa agcccg gcacccgcc agccgggctg ggccctccct gccacactag 977
 Leu Cys *

cttcccaggg ctgccccga caggctggct ctcagtggag gccagagatc tggaatcggg 1037

gtcagcgggg ctacagtcct tccaggggct ctggggcagc tccagcctc ttcccatgct 1097

ggtggccacc gtgtcccttg ctgcggctgc atcttccagt ctctcctcgg tcttccagtg 1157

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 gaggaataaa gaagtcacct cccagctgt catcatcttc cagcagattg agcaagaata 180
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ttttcaagaa gaggaatagg gtgaatgaat ctcatcagaa aagcagcaat	atg aat	296
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Ala Gly Pro Ser Trp Asn Lys Val Gln His Ser Lys Asn Ser Ser Gly		
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aaa agg cag agt aaa tcc caa gta ccc cac gct tct tcc cag ccg aga		392
Lys Arg Gln Ser Lys Ser Gln Val Pro His Ala Ser Ser Gln Pro Arg		
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agc agc ctc aca gct gtc acc cag cct act gaa gaa aaa ctt aaa gaa		440
Ser Ser Leu Thr Ala Val Thr Gln Pro Thr Glu Glu Lys Leu Lys Glu		
35 40 45 50		
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Ser Ile Ser Pro Glu Ala Arg Arg Lys Arg Asn Pro Leu Gly Ser Arg		
55 60 65		
tgt cag ggg gcc tca ggg aat aaa ctg ttt ctt gat ttt cag tca atg		536
Cys Gln Gly Ala Ser Gly Asn Lys Leu Phe Leu Asp Phe Gln Ser Met		
70 75 80		
aaa att att aaa gag aat gct gat gag gac agt gca agt gat ctc tct		584
Lys Ile Ile Lys Glu Asn Ala Asp Glu Asp Ser Ala Ser Asp Leu Ser		
85 90 95		
gat tcg gaa aga att ccc att cct cct tct ccc ctc aca cct cca gat		632
Asp Ser Glu Arg Ile Pro Ile Pro Pro Ser Pro Leu Thr Pro Pro Asp		
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Leu Asn Leu Arg Ala Glu Glu Ile Asp Pro Val Tyr Phe Asp Leu His		
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Pro Gly Gln Gly His Thr Lys Pro Glu Tyr Tyr Tyr Pro Asn Phe Leu		
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Pro Ser Pro Phe Ser Ser Trp Asp Leu Arg Asp Met Ala Leu Leu Leu		
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Asn Ala Glu Asn Lys Thr Glu Ala Val Pro Arg Val Gly Gly Leu Leu		
165 170 175		
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Gly Lys Tyr Ile Asp Arg Leu Ile Gln Leu Glu Trp Leu Gln Val Gln		
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Thr Val Gln Cys Glu Lys Ala Lys Gly Gly Lys Ala Arg Pro Pro Thr		
195 200 205 210		

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215 220 225

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230 235 240

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Lys Ser Gly Pro Ser Arg Lys Lys Ala Phe His His Glu Glu Ile His
245 250 255

cca tca cat tat gca ttt gag act tcc cct aga ccc att gat gtg ctt 1112
Pro Ser His Tyr Ala Phe Glu Thr Ser Pro Arg Pro Ile Asp Val Leu
260 265 270

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Gly Gly Thr Arg Phe Cys Ser Gln Arg Gln Thr Leu Glu Met Arg Thr
275 280 285 290

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Glu Glu Lys Lys Lys Lys Ser Ser Lys Ser Thr Lys Leu Gln Arg Trp
295 300 305

gat ctg tcc ggc agt gga agc agc tct aag gtg gaa acc agc ggt cac 1256
Asp Leu Ser Gly Ser Gly Ser Ser Ser Lys Val Glu Thr Ser Gly His
310 315 320

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Ile Arg Val Pro Lys Gln Ala Ala Val Ile Leu Asp Ser Ala Asp Ser
325 330 335

tgt aag gcc tcc aaa aca caa gca cat gca cat cct agg aaa aag gga 1352
Cys Lys Ala Ser Lys Thr Gln Ala His Ala His Pro Arg Lys Lys Gly
340 345 350

aag gca gag agc tgt ggt cat gcc act gta tcg agt gag aaa aaa ctg 1400
Lys Ala Glu Ser Cys Gly His Ala Thr Val Ser Ser Glu Lys Lys Leu
355 360 365 370

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Lys Thr Asn Gly Val Lys Gln Asn Thr Tyr Lys Leu Lys *
375 380

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Glu Phe Lys Tyr Gln Met Thr Arg Thr Gly Trp His Ala Thr Glu Gln	
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Tyr Leu Ile Glu Pro Glu Lys Ile Gln Glu Met Phe Pro Leu Leu Asn	
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Met Asn Lys Val Leu Ala Gly Leu Tyr Asn Pro Gly Asp Gly His Ile	
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Asp Pro Tyr Ser Leu Thr Met Ala Leu Ala Ala Gly Ala Arg Lys Cys	
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Gly Ala Leu Leu Lys Tyr Pro Ala Pro Val Thr Ser Leu Lys Ala Arg	
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Ser Asp Gly Thr Trp Asp Val Glu Thr Pro Gln Gly Ser Met Arg Ala	
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Ser	Gly	Ser	Tyr	Ser	Tyr	Ser	Ile	Gln	Lys	Ser	Leu	Ala	Phe	Ala	Tyr		
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Thr	*																
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Thr Arg Ser Gln Pro Arg Asp Pro Val Arg Pro Pro Arg Arg Gly Arg	
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Ser Thr Val Ser Gly Phe Phe Ala Ala Ser Phe Met Ser Tyr Gln	
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Gln Cys Glu Phe Asn Phe Gly Ala Lys Pro Phe Lys Tyr Pro Pro Ser	
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Met Lys Phe Ser Thr Phe Asn Asp Tyr Ala Phe Leu Thr Ala Glu Glu	
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Lys Ile Ile Leu Pro Arg His Arg Arg Leu Ala Leu Leu Lys Gln Val	
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Thr Gln Leu Lys Pro Cys Gly His Ser Asp Leu Cys Met Asp Cys Ala	
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ccc gtg tgt ctt ttg gaa ttt gag gag gag gag act gcc att gag atg    289
Pro Val Cys Leu Leu Glu Phe Glu Glu Glu Glu Thr Ala Ile Glu Met
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cct tgc cat cac ctt ttc cat tcc agc tgc att ctg ccc tgg cta agc    337
Pro Cys His His Leu Phe His Ser Ser Cys Ile Leu Pro Trp Leu Ser
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aag aca aat tcc tgt ccc ttg tgc cgc cat gag ctg ccc act gat gac    385
Lys Thr Asn Ser Cys Pro Leu Cys Arg His Glu Leu Pro Thr Asp Asp
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gac act tat gag gag cac aga cga gat aag gct cga aaa cag cag cag    433
Asp Thr Tyr Glu Glu His Arg Arg Asp Lys Ala Arg Lys Gln Gln Gln
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caa cac cga ctg gag aac ctc cat gga gcc atg tac acg tga ggaggtt    482
Gln His Arg Leu Glu Asn Leu His Gly Ala Met Tyr Thr  *
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Pro Ser Asp Pro Glu Gln Glu Thr Arg Thr Asn Met Leu Leu Glu Leu
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Ala Arg Ser Leu Phe Asn Arg Met Asp Phe Glu Asp Leu Gly Leu Val
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Val Asp Trp Asp His His Leu Pro Pro Pro Ala Ala Lys Thr Val Val
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Val Pro Trp Ala Gln Tyr Ser Ser Phe Phe Leu Phe Met Asp Cys Trp
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ggg atg gaa gaa gag tgg cag ttg gga gca ggg gag ggt ggt tat cag   338
Gly Met Glu Glu Glu Trp Gln Leu Gly Ala Gly Glu Gly Gly Tyr Gln
                95               100               105

ctt atg aag atc aga cca agg cta gaa cac tac tct act ttt ctc aga   386
Leu Met Lys Ile Arg Pro Arg Leu Glu His Tyr Ser Thr Phe Leu Arg
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caa att cct gtc cct tgt gcc gct atg agc tgc cca ctg atg acg aca   434
Gln Ile Pro Val Pro Cys Ala Ala Met Ser Cys Pro Leu Met Thr Thr
                125               130               135

ctt atg agg agc aca gac gag ata agg ctc gaa aac agc agc agc aac   482
Leu Met Arg Ser Thr Asp Glu Ile Arg Leu Glu Asn Ser Ser Ser Asn
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acc gac tgg aga acc tcc atg gag cca tgt aca cgt gag gag gtt ggg   530
Thr Asp Trp Arg Thr Ser Met Glu Pro Cys Thr Arg Glu Glu Val Gly
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175

180

185

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15

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25

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Leu Phe Pro Gly Cys Glu Arg Gly Leu His Cys Ser Ala Val Ser Cys

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Lys Asn Trp Leu Lys Lys Phe Ala Ser Lys Thr Lys Lys Lys Val Trp

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Tyr Glu Ser Pro Ser Leu Gly Ser His Ser Thr Tyr Lys Pro Ser Lys

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ttg gaa ttc ctc atg agg agc acc tca aag aaa acc agg aag gaa gac 292

Leu Glu Phe Leu Met Arg Ser Thr Ser Lys Lys Thr Arg Lys Glu Asp

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95

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Asp Leu Leu Cys Thr Pro Glu Val Ser Gln Glu Leu Tyr Asp Leu Asn

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Val Glu Leu Ser Lys Val Ser Leu Thr Pro Asp Phe Ser Ala Cys Arg

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Gln Gln Thr Leu Arg Asn Val Pro Pro Ile Val Phe Val Gln Asp Lys	
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Gly Asn Ala Ala Leu Ala Glu Leu Asp Gln Leu Leu Ala Val Ala Asp	
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Phe Gly Pro Arg Asp Glu Arg Asp Asn Phe Val Gln Asn Asp Phe Arg	
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Asp Pro Asp Ala Pro Gln Pro Cys Gly Thr Thr Glu Pro Thr Thr Ser	
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Ser Ser Leu Cys Gly Ile Asp His Glu Ala Leu His Lys Gln Ile Met	
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 Met Ser Glu Lys
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 Val Asn Leu Ile Ala Cys Leu Ala Trp Trp Ile Gly Gly Gly Ser Gly
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 Thr Asn Phe Gly Leu Ala Phe Val Trp Leu Leu Phe Thr Pro Cys
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 Gly Tyr Val Cys Trp Phe Arg Pro Val Tyr Lys Ala Phe Arg Ala Asp
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gaggtacggc ctgtggtc atg gcg ctg ttc cca gcc ttt gcg ggg ctt agt	171
Met Ala Leu Phe Pro Ala Phe Ala Gly Leu Ser	
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Glu Ala Pro Asp Gly Gly Ser Ser Arg Lys Glu Leu Asp Trp Leu Ser	
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Asn Pro Ser Phe Cys Val Gly Ser Ile Thr Ser Leu Ser Gln Gln Thr	
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Glu Ala Ala Pro Ala His Val Ser Glu Gly Leu Pro Leu Thr Arg Ser	
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Lys Gln Thr Ser Arg Lys Lys Lys Lys Glu Lys Lys Lys Lys Arg Lys	
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His Gln His His Lys Lys Thr Lys Arg Lys His Gly Pro Ser Ser Ser	
95 100 105	
agc agg tct gag aca gac acc gat tct gaa aag gac aaa cct tcc aga	507
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Gly Val Gly Gly Ser Lys Lys Glu Ser Glu Glu Pro Asn Gln Gly Asn	
125 130 135	
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Asn Ala Ala Ala Asp Thr Gly His Arg Phe Val Trp Leu Glu Asp Ile	
140 145 150 155	
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Gln Ala Val Thr Gly Glu Thr Phe Arg Thr Asp Lys Lys Pro Asp Pro	
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Ala Asn Trp Glu Tyr Lys Ser Leu Tyr Arg Gly Asp Ile Ala Arg Tyr	
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Lys Arg Lys Gly Asp Ser Cys Leu Gly Ile Asn Pro Lys Lys Gln Cys	
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Ile Ser Trp Glu Gly Thr Ser Thr Glu Lys Lys His Ser Arg Lys Gln	
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Gly Val Ala Ile Ser Ser Lys Thr Glu Pro Pro Ser Ser Glu Pro Ile	
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255 260 265	
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Trp Leu Asn Pro Leu Gly Ile Tyr Asp Gln Ser Thr Thr His Trp Leu	
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335 340 345	
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Ser Val Asp Leu Lys Leu Ala Lys Leu Lys Leu Cys Thr Glu Phe Trp	
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Glu Pro Ser Thr Leu Val Lys Glu Trp Gln Lys Leu Ile Phe Leu His	
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Pro Asn Asn Thr Ala Leu Trp Gln Lys Tyr Leu Leu Phe Cys Gln Ser	
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cag ttt agt acc ttt tcg ata tca aaa att cac agt ctt tat gga aaa	1467
Gln Phe Ser Thr Phe Ser Ile Ser Lys Ile His Ser Leu Tyr Gly Lys	
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Cys Leu Ser Thr Leu Ser Ala Val Lys Asp Gly Ser Ile Leu Ser His	
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Pro Ala Leu Pro Gly Thr Glu Glu Ala Met Phe Ala Leu Phe Leu Gln	
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480 485 490	
ttg ttc cag gcc atg gtg gac ttc acc ttc ttc aaa ccc gac agc gta	1659
Leu Phe Gln Ala Met Val Asp Phe Thr Phe Phe Lys Pro Asp Ser Val	
495 500 505	
aaa gat ctg cct acc aaa gga cag gtg gaa ttc ttt gaa ccc ttt tgg	1707
Lys Asp Leu Pro Thr Lys Gly Gln Val Glu Phe Phe Glu Pro Phe Trp	
510 515 520	
gac agt gga gag ccc cgg gct ggg gag aag gga gcc cga ggc tgg aag	1755

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Asp	Glu	Asp	Asp	Asp	Glu	Pro	Glu	Glu	Asp	Asp	Gln	Glu	Ile	Lys	Asp	
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Lys	Thr	Leu	Pro	Arg	Trp	Gln	Ile	Trp	Leu	Ala	Ala	Glu	Arg	Ser	Arg	
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gac	cag	agg	cac	tgg	cgg	ccc	tgg	cgc	cct	gat	aag	acc	aag	aag	caa	1947
Asp	Gln	Arg	His	Trp	Arg	Pro	Trp	Arg	Pro	Asp	Lys	Thr	Lys	Lys	Gln	
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Thr	Glu	Glu	Asp	Cys	Glu	Asp	Pro	Glu	Arg	Gln	Gly	Val	Phe	Asp	Asp	
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Ile	Gly	Gln	Ser	Leu	Ile	Arg	Leu	Ser	Ser	His	Asp	Leu	Gln	Phe	Gln	
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Phe	Ser	Gly	Ala	Ser	Cys	Val	Gly	Arg	Met	Asp	Arg	Leu	Gly	Tyr	Pro	
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Leu	Cys	Phe	Ser	Trp	Leu	Gln	Tyr	Glu	Ile	Ala	Lys	Val	Ile	Trp	Cys	
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Phe Cys Leu Trp Lys Gln Tyr Ala His Leu Glu Trp Leu Leu Gly Asn			
780	785	790	795
acg gag gat gcc aga aaa gtt ttt gac aca gca ctt ggc atg gca gga			2571
Thr Glu Asp Ala Arg Lys Val Phe Asp Thr Ala Leu Gly Met Ala Gly			
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Ser Arg Glu Leu Lys Asp Ser Asp Leu Cys Glu Leu Ser Leu Leu Tyr			
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ggg ccc tac act gga cag gtg ttg gct gtt cac att ttg aaa gcg cga			2763
Gly Pro Tyr Thr Gly Gln Val Leu Ala Val His Ile Leu Lys Ala Arg			
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Lys Ala Tyr Glu His Ala Leu Gln Asp Cys Leu Gly Asp Ser Cys Val			
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Ser Val Leu Glu Ala Ile Thr Leu Met His Thr Ser Leu Leu Arg Phe			
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cac atg aaa gtg agt gtt tac ccg ctg gcc cct ctg cga gag gca ctc			3099
His Met Lys Val Ser Val Tyr Pro Leu Ala Pro Leu Arg Glu Ala Leu			
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Leu Gln Asn Cys Pro Trp Ala Lys Val Leu Tyr Leu Asp Ala Val Glu	
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Leu Glu Ile Ser Arg Ile Leu Asn Thr Gly Leu Asp Met Glu Thr Leu
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Ser Ile Cys Val Arg Leu Cys Glu Gln Gly Ile Asn Pro Glu Ala Leu
                   45           50           55           60

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Ser Ser Val Ile Lys Glu Leu Arg Lys Ala Thr Glu Ala Leu Lys Ala
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gct gaa aat atg aca agc tga ct ttctggagaa attctgatga gatatgtcaa      294
Ala Glu Asn Met Thr Ser  *
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atttccatta taaactttta ttttgaattg tttatgcatt ataactgtgg atttatattg      714

tattgggctg aaagttgaca ggatttcagc caccacttgt gaatttttat ttagattcat      774

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ctcttgaaca aagaatattt agtttttcaa acagtttggt gggcagctaa tagtgtgaac      894

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Met Ser Ser Pro Leu Gln Arg Ala Val Gly Asp Thr Lys Arg
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gcc ttt tct gca tct tct agt tcc tct gcc agt cta ccc ttt gat gac 337
Ala Phe Ser Ala Ser Ser Ser Ser Ser Ala Ser Leu Pro Phe Asp Asp
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agg gac tca aac cat acc tca gag ggg aat ggc gac tct ttg tta gct 385
Arg Asp Ser Asn His Thr Ser Glu Gly Asn Gly Asp Ser Leu Leu Ala
35 40 45
gat gaa gac act gac ttt gaa gac agc ttg aat cgc aat gtg aag aag 433
Asp Glu Asp Thr Asp Phe Glu Asp Ser Leu Asn Arg Asn Val Lys Lys
50 55 60
aga gca gca aaa cga cca ccg aaa aca aca ccg gtg gca aaa cat cca 481
Arg Ala Ala Lys Arg Pro Pro Lys Thr Thr Pro Val Ala Lys His Pro
65 70 75
aag aaa ggg tcc cga gtg gta cat cgt cat agc cgg aaa cag tca gag 529
Lys Lys Gly Ser Arg Val Val His Arg His Ser Arg Lys Lys Ser Glu
80 85 90
cca cca gcc aat gat ctt ttc aat gct gtg aaa gcc gcc aaa agt gac 577
Pro Pro Ala Asn Asp Leu Phe Asn Ala Val Lys Lys Ala Ala Lys Ser Asp
95 100 105 110

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Met Gln Ser Leu Val Asp Glu Trp Leu Asp Ser Tyr Lys Gln Asp Gln	
115 120 125	
gat gca gga ttt ctg gag ctt gtt aac ttt ttc atc caa tct tgc gga	673
Asp Ala Gly Phe Leu Glu Leu Val Asn Phe Phe Ile Gln Ser Cys Gly	
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Cys Lys Gly Ile Val Thr Pro Glu Met Phe Lys Lys Met Ser Asn Ser	
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Tyr Pro Leu Ile Ala Pro Gly Pro Ser Trp Lys Lys Phe Gln Gly Ser	
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225 230 235	
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Ala Met Lys Leu Met Thr Ser Leu Val Lys Val Ala Leu Gln Leu Ser	
240 245 250	
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Val His Gln Asp Asn Asn Gln Arg Gln Tyr Glu Ala Glu Arg Asn Lys	
255 260 265 270	
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Gly Pro Gly Gln Arg Ala Pro Glu Arg Leu Glu Ser Leu Leu Glu Lys	
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cgc aaa gag ctc caa gag cat caa gag gag att gag ggg atg atg aat	1153
Arg Lys Glu Leu Gln Glu His Gln Glu Glu Ile Glu Gly Met Met Asn	
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Ala Leu Phe Arg Gly Val Phe Val His Arg Tyr Arg Asp Val Leu Pro	
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Glu Ile Arg Ala Ile Cys Ile Glu Glu Ile Gly Cys Trp Met Gln Ser	
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Tyr	Ser	Thr	Ser	Phe	Leu	Thr	Asp	Ser	Tyr	Leu	Lys	Tyr	Ile	Gly	Trp	
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act	ctg	cat	gat	aag	cac	cga	gaa	gtc	cgc	gtg	aag	tgc	gtg	aag	gct	1345
Thr	Leu	His	Asp	Lys	His	Arg	Glu	Val	Arg	Val	Lys	Cys	Val	Lys	Ala	
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ctg	aaa	ggg	ctg	tac	ggg	aac	cgg	gac	ctg	acc	gca	cgc	ctg	gag	ctc	1393
Leu	Lys	Gly	Leu	Tyr	Gly	Asn	Arg	Asp	Leu	Thr	Ala	Arg	Leu	Glu	Leu	
				370				375						380		
ttc	acc	agc	cgc	ttc	aag	gac	cgg	atg	gtt	tcc	atg	atc	atg	gac	aga	1441
Phe	Thr	Ser	Arg	Phe	Lys	Asp	Arg	Met	Val	Ser	Met	Ile	Met	Asp	Arg	
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gag	tac	agt	gtg	gca	gtg	gag	gcc	gtc	aga	tta	ctg	ata	ctt	ata	ctt	1489
Glu	Tyr	Ser	Val	Ala	Val	Glu	Ala	Val	Arg	Leu	Leu	Ile	Leu	Ile	Leu	
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aag	aac	atg	gaa	ggg	ttg	ctg	acg	gac	gcg	gat	tgt	gag	agc	gtc	tac	1537
Lys	Asn	Met	Glu	Gly	Leu	Leu	Thr	Asp	Ala	Asp	Cys	Glu	Ser	Val	Tyr	
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Pro	Val	Val	Tyr	Pro	Ser	Asn	Arg	Gly	Leu	Ala	Ser	Ala	Ala	Gly	Glu	
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Phe	Leu	Tyr	Trp	Lys	Leu	Phe	Tyr	Pro	Glu	Cys	Glu	Ile	Arg	Thr	Met	
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Gly	Gly	Arg	Glu	Gln	Arg	Gln	Ser	Pro	Gly	Ala	Gln	Arg	Thr	Phe	Phe	
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cag	ctt	ctg	ctg	tcc	ttc	ttt	gtg	gag	agc	gag	ctc	cat	gac	cac	gct	1729
Gln	Leu	Leu	Leu	Ser	Phe	Phe	Val	Glu	Ser	Glu	Leu	His	Asp	His	Ala	
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Ala	Tyr	Leu	Val	Asp	Ser	Leu	Trp	Asp	Cys	Ala	Gly	Ala	Arg	Leu	Lys	
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Asp	Trp	Glu	Gly	Leu	Thr	Ser	Leu	Leu	Leu	Glu	Lys	Asp	Gln	Asn	Leu	
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Gly	Asp	Val	Gln	Glu	Ser	Thr	Leu	Ile	Glu	Ile	Leu	Val	Ser	Ser	Ala	
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cgg	caa	gct	tca	gag	ggg	cac	ccg	cct	gtg	ggc	cgg	gtc	act	ggg	agg	1921
Arg	Gln	Ala	Ser	Glu	Gly	His	Pro	Pro	Val	Gly	Arg	Val	Thr	Gly	Arg	
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Lys	Gly	Leu	Thr	Ser	Lys	Glu	Arg	Lys	Thr	Gln	Ala	Asp	Asp	Arg	Val	

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Lys Leu Thr Glu His Leu Ile Pro Leu Leu Pro Gln Leu Leu Ala Lys			
575	580	585	590
ttc tca gct gat gca gag aag gtc act ccc ctg ctc cag ctt ctc agc			2065
Phe Ser Ala Asp Ala Glu Lys Val Thr Pro Leu Leu Gln Leu Leu Ser			
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tgc ttt gac ctc cac atc tac tgc act ggg cgc ttg gag aag cac ctg			2113
Cys Phe Asp Leu His Ile Tyr Cys Thr Gly Arg Leu Glu Lys His Leu			
	610	615	620
gag ctg ttc ctg cag caa ctc cag gag gtg gtg gtg aag cat gca gag			2161
Glu Leu Phe Leu Gln Gln Leu Gln Glu Val Val Val Lys His Ala Glu			
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cca gcg gtg ctt gag gct ggg gcg cat gcc ctc tac ctg ctc tgt aat			2209
Pro Ala Val Leu Glu Ala Gly Ala His Ala Leu Tyr Leu Leu Cys Asn			
	640	645	650
ccc gaa ttc act ttc ttc agc cgg gcg gac ttt gcc cgc agc cag cta			2257
Pro Glu Phe Thr Phe Phe Ser Arg Ala Asp Phe Ala Arg Ser Gln Leu			
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gta gat ttg ctg act gac cgc ttc cag cag gag ctt gaa gag ctg tta			2305
Val Asp Leu Leu Thr Asp Arg Phe Gln Gln Glu Leu Glu Glu Leu Leu			
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Gln Ser Ser Phe Leu Asp Glu Asp Glu Val Tyr Asn Leu Ala Ala Thr			
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Leu Lys Arg Leu Ser Ala Phe Tyr Asn Thr His Asp Leu Thr Arg Trp			
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gag ctc tat gag cca tgt tgc caa ctc ctg cag aag gct gtg gac aca			2449
Glu Leu Tyr Glu Pro Cys Cys Gln Leu Leu Gln Lys Ala Val Asp Thr			
	720	725	730
gga gag gtt cct cac cag gtt atc ctg cca gcc ttg act ctt gtc tat			2497
Gly Glu Val Pro His Gln Val Ile Leu Pro Ala Leu Thr Leu Val Tyr			
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Phe Ser Ile Leu Trp Thr Leu Thr His Ile Ser Lys Ser Asp Ala Ser			
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Gln Lys Gln Leu Ser Ser Leu Arg Asp Arg Met Val Ala Phe Cys Glu			
	770	775	780
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Leu Cys Gln Ser Cys Leu Ser Asp Val Asp Thr Glu Ile Gln Glu Gln			
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Ala Phe Val Leu Leu Ser Asp Leu Leu Leu Ile Phe Ser Pro Gln Met	
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Ile Val Gly Gly Arg Asp Phe Leu Arg Pro Leu Val Phe Phe Pro Glu	
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Ala Thr Leu Gln Ser Glu Leu Ala Ser Phe Leu Met Asp His Val Phe	
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Gln Ile Glu Arg Leu His Gln Arg Arg Arg Leu Leu Ala Gly Phe Cys	
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Phe Lys His Tyr Asn Lys Phe Tyr Asn Asp Tyr Gly Asp Ile Ile Lys	
895 900 905 910	
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Ile Leu Leu Leu Ser Leu Lys Gln Leu Tyr Thr Glu Leu Leu Gln Glu	
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cat ggg ccc cag ggc ctg aat gag ctt cct gcc ttc atc gag atg agg	3121
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Asp Leu Ala Arg Arg Phe Ala Leu Ser Phe Gly Pro Gln Gln Leu Gln	
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Asn Arg Asp Leu Val Val Met Leu His Lys Glu Gly Ile Gln Phe Ser	
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Leu Ser Glu Leu Pro Pro Ala Gly Ser Ser Asn Gln Pro Pro Asn Leu	
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Leu Glu Asn Ala Gln His Val Ala Leu Val Cys Ala Arg Gly Glu Arg
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Phe Leu Ala Arg Asp Ala Leu Arg Ser Leu Ala Val Leu Glu Gly Ala
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agc ctg gtg gtg ggc aaa gat gga ttt ata aaa gct att ggt cct gct      196
Ser Leu Val Val Gly Lys Asp Gly Phe Ile Lys Ala Ile Gly Pro Ala
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gat gtt att caa aga cag ttt tct gga gaa act ttt gaa gaa tta att      244
Asp Val Ile Gln Arg Gln Phe Ser Gly Glu Thr Phe Glu Glu Leu Ile
                                60                                65                                70

gac tgc tct ggg aaa tgt atc cta cca ggt ttg gtg gat gca cac aca      292
Asp Cys Ser Gly Lys Cys Ile Leu Pro Gly Leu Val Asp Ala His Thr
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cat cca gta tgg gct ggt gaa aga gtt cac gaa ttt gca atg aag ttg      340
His Pro Val Trp Ala Gly Glu Arg Val His Glu Phe Ala Met Lys Leu
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Ala Gly Ala Thr Tyr Met Glu Ile His Gln Ala Gly Gly Gly Ile His
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Val Glu Cys Lys Ser Gly Tyr Gly Leu Asp Leu Glu Thr Glu Leu Lys	
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Met Leu Arg Val Ile Glu Arg Ala Arg Arg Glu Leu Asp Ile Gly Ile	
170 175 180	
tcg gct acc tac tgc ggg gct cat tca gtg cct aaa gga aaa act gct	628
Ser Ala Thr Tyr Cys Gly Ala His Ser Val Pro Lys Gly Lys Thr Ala	
185 190 195 200	
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Thr Glu Ala Ala Asp Asp Ile Ile Asn Asn His Leu Pro Lys Leu Lys	
205 210 215	
gaa ctt ggc aga aat ggg gaa ata cac gtg gac aat ata gac gta ttt	724
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Cys Glu Lys Gly Val Phe Asp Leu Asp Ser Thr Arg Arg Ile Leu Gln	
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Arg Gly Lys Asp Ile Gly Leu Gln Ile Asn Phe His Gly Asp Glu Leu	
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His Pro Met Lys Ala Ala Glu Leu Gly Ala Glu Leu Gly Ala Gln Ala	
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Ile Ser His Leu Glu Glu Val Ser Asp Glu Gly Ile Val Ala Met Ala	
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acg gcc agg tgc tct gcc atc ctt ctg ccc acc aca gcc tac atg ctg	964
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Ala	Ala	Lys	Ala	Val	Glu	Ser	Gly	Ala	Leu	Glu	Leu	Ser	Pro	Ser	Phe		

				425					430					435			
cac	cag	aag	aac	tgg	cag	cac	tgg	ttt	tcc	cat	att	ggg	gac	tgg	tgt		1458
His	Gln	Lys	Asn	Trp	Gln	His	Trp	Phe	Ser	His	Ile	Gly	Asp	Trp	Cys		
			440					445					450				
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Val	Ser	Arg	Gln	Leu	Trp	Trp	Gly	His	Gln	Ile	Pro	Ala	Tyr	Leu	Val		
		455					460					465					
gta	gag	gac	cat	gcg	cag	gga	gaa	gag	gac	tgt	tgg	gtg	gtc	ggg	cgg		1554
Val	Glu	Asp	His	Ala	Gln	Gly	Glu	Glu	Asp	Cys	Trp	Val	Val	Gly	Arg		
	470					475					480						
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Ser	Glu	Ala	Glu	Ala	Arg	Glu	Val	Ala	Ala	Glu	Leu	Thr	Gly	Arg	Pro		
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Gly	Ala	Glu	Leu	Thr	Leu	Glu	Arg	Asp	Pro	Asp	Val	Leu	Asp	Thr	Trp		
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ttt	tct	tct	gcc	ctg	ttc	ccc	ttt	tct	gcc	ctg	ggc	tgg	ccc	caa	gag		1698
Phe	Ser	Ser	Ala	Leu	Phe	Pro	Phe	Ser	Ala	Leu	Gly	Trp	Pro	Gln	Glu		
			520					525					530				
acc	cca	gac	ctt	gct	cgt	ttc	tac	ccc	ctg	tca	ctt	ttg	gaa	acg	ggc		1746
Thr	Pro	Asp	Leu	Ala	Arg	Phe	Tyr	Pro	Leu	Ser	Leu	Leu	Glu	Thr	Gly		
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agc	gac	ctt	ctg	ctg	ttc	tgg	gtg	ggc	cgc	atg	gtc	atg	ttg	ggg	acc		1794
Ser	Asp	Leu	Leu	Leu	Phe	Trp	Val	Gly	Arg	Met	Val	Met	Leu	Gly	Thr		
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Gln	Leu	Thr	Gly	Gln	Leu	Pro	Phe	Ser	Lys	Val	Leu	Leu	His	Pro	Met		
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Val	Arg	Asp	Arg	Gln	Gly	Arg	Lys	Met	Ser	Lys	Ser	Leu	Gly	Asn	Val		
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Leu	Asp	Pro	Arg	Asp	Ile	Ile	Ser	Gly	Val	Glu	Met	Gln	Val	Leu	Gln		
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gaa	aag	ctg	aga	agc	gga	aat	ttg	gac	cct	gca	gag	ctg	gcc	att	gtg		1986
Glu	Lys	Leu	Arg	Ser	Gly	Asn	Leu	Asp	Pro	Ala	Glu	Leu	Ala	Ile	Val		
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gct	gca	gca	cag	aaa	aag	gac	ttt	cct	cac	ggg	atc	cct	gag	tgt	ggg		2034
Ala	Ala	Ala	Gln	Lys	Lys	Asp	Phe	Pro	His	Gly	Ile	Pro	Glu	Cys	Gly		
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aca	gat	gcc	ctg	aga	ttc	aca	ctc	tgc	tcc	cat	gga	gtt	cag	gcg	ggc		2082
Thr	Asp	Ala	Leu	Arg	Phe	Thr	Leu	Cys	Ser	His	Gly	Val	Gln	Ala	Gly		
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Asn Lys Ile Trp Asn Ala Leu Arg Phe Ile Leu Asn Ala Leu Gly Glu	
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Lys Phe Val Pro Gln Pro Ala Glu Glu Leu Ser Pro Ser Ser Pro Met	
695 700 705	
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Asp Ala Trp Ile Leu Ser Arg Leu Ala Leu Ala Ala Gln Glu Cys Glu	
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Arg Gly Phe Leu Thr Arg Glu Leu Ser Leu Val Thr His Ala Leu His	
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His Phe Trp Leu His Asn Leu Cys Asp Val Tyr Leu Glu Ala Val Lys	
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Pro Val Leu Trp His Ser Pro Arg Pro Leu Gly Pro Pro Gln Val Leu	
760 765 770	
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Phe Ser Cys Ala Asp Leu Gly Leu Arg Leu Leu Ala Pro Leu Met Pro	
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Pro Pro Ala Pro Ser Ile Ser Val Ala Pro Tyr Pro Ser Ala Cys Ser	
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Gln Glu Val Val Gln Val Leu Arg Ala Leu Arg Ala Thr Tyr Gln Leu	
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Thr Lys Ala Arg Pro Arg Val Leu Leu Gln Ser Ser Glu Pro Gly Asp	
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Gln Gly Leu Phe Glu Ala Phe Leu Glu Pro Leu Gly Thr Leu Gly Tyr	
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cag ggc ctg gtg gac ccg cag atc cag cta cct ctg tta gcc gcc cga      2898
Gln Gly Leu Val Asp Pro Gln Ile Gln Leu Pro Leu Leu Ala Ala Arg
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Gln Leu Glu Leu Ser Lys Leu Asp Lys Ala Ala Ser His Leu Gln Gln
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Leu Met Asp Glu Pro Pro Ala Pro Gly Ser Pro Glu Leu *
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cagaagacaa gagtgcgagc cttctgttat gcctggcaac gggcgtcttc ccagatgctg      240
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Lys Leu Trp Trp Arg Ser Val Ala Val Leu Thr Cys Lys Ser Val Val
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cga cct ggg tat agg ggc ggg ctc cag gcg agg cgg tcg acg ctc ctg      686
Arg Pro Gly Tyr Arg Gly Gly Leu Gln Ala Arg Arg Ser Thr Leu Leu
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aaa act tgc gcg cgc gct cgc gcc act gcg ccc gga gcg atg aag atg      734
Lys Thr Cys Ala Arg Ala Arg Ala Thr Ala Pro Gly Ala Met Lys Met
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gtc gcg ccc tgg acg cgg ttc tac tcc aac agc tgc tgc ttg tgc tgc      782
Val Ala Pro Trp Thr Arg Phe Tyr Ser Asn Ser Cys Cys Leu Cys Cys
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cat gtc cgc acc ggc acc atc ctg ctc ggc gtc tgg tat ctg atc atc      830
His Val Arg Thr Gly Thr Ile Leu Leu Gly Val Trp Tyr Leu Ile Ile
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aat gct gtg gta ctg ttg att tta ttg agt gcc ctg gct gat ccg gat      878
Asn Ala Val Val Leu Leu Ile Leu Leu Ser Ala Leu Ala Asp Pro Asp
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cag tat aac ttt tca agt tct gaa ctg gga ggt gac ttt gag ttc atg      926
Gln Tyr Asn Phe Ser Ser Ser Glu Leu Gly Gly Asp Phe Glu Phe Met
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gat gat gcc aac atg tgc att gcc att gcg att tct ctt ctc atg atc      974
Asp Asp Ala Asn Met Cys Ile Ala Ile Ala Ile Ser Leu Leu Met Ile
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ctg ata tgt gct atg gct act tac gga gcg tac aag caa cgc gca gcc      1022

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85 90 95	
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100 105 110	
acc aac atc ttc tcc aac ctg acc tgc ctg ggc aag ctc acc ctc aac Thr Asn Ile Phe Ser Asn Leu Thr Ser Leu Gly Lys Leu Thr Leu Asn	441
115 120 125	
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130 135 140 145	
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150 155 160	
agg agg ctc ttc cag cct ctg acc cat ctg aag aca ctc aac ctg gcc Arg Arg Leu Phe Gln Pro Leu Thr His Leu Lys Thr Leu Asn Leu Ala	585
165 170 175	
cag aac ctc ctg gcc cag ctc ccg gag gag ctg ttc cac cca ctc acc Gln Asn Leu Leu Ala Gln Leu Pro Glu Glu Leu Phe His Pro Leu Thr	633
180 185 190	
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195 200 205	
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230 235 240	
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Cys	Leu	Glu	Arg	Leu	Trp	Leu	Gln	Arg	Asn	Ala	Ile	Thr	His	Leu	Pro	
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ctc	tcc	atc	ttt	gcc	tcc	ctg	ggt	aat	ctg	acc	ttt	ctg	agc	ttg	cag	873
Leu	Ser	Ile	Phe	Ala	Ser	Leu	Gly	Asn	Leu	Thr	Phe	Leu	Ser	Leu	Gln	
		260					265				270					
tgg	aac	atg	ctt	cgg	gtc	ctg	cct	gcc	ggc	ctc	ttt	gcc	cac	acc	cca	921
Trp	Asn	Met	Leu	Arg	Val	Leu	Pro	Ala	Gly	Leu	Phe	Ala	His	Thr	Pro	
	275					280					285					
tgc	ctg	gtt	ggc	ctg	tct	ctg	acc	cat	aac	cag	ctg	gag	act	gtc	gct	969
Cys	Leu	Val	Gly	Leu	Ser	Leu	Thr	His	Asn	Gln	Leu	Glu	Thr	Val	Ala	
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Glu	Gly	Thr	Phe	Ala	His	Leu	Ser	Asn	Leu	Arg	Ser	Leu	Met	Leu	Ser	
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Tyr	Asn	Ala	Ile	Thr	His	Leu	Pro	Ala	Gly	Ile	Phe	Arg	Asp	Leu	Glu	
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Glu	Leu	Val	Lys	Leu	Tyr	Leu	Gly	Ser	Asn	Asn	Leu	Thr	Ala	Leu	His	
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Pro	Ala	Leu	Phe	Gln	Asn	Leu	Ser	Lys	Leu	Glu	Leu	Leu	Ser	Leu	Ser	
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Lys	Asn	Gln	Leu	Thr	Thr	Leu	Pro	Glu	Gly	Ile	Phe	Asp	Thr	Asn	Tyr	
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 Asn Thr Leu Phe Met Asn Thr Cys Cys Leu Gly Phe Ile Ala Phe Ala
 65 70 75
 tac tcc gtg aag tct agg gac agg aag atg gtt ggc gac gtg acc ggg 349
 Tyr Ser Val Lys Ser Arg Asp Arg Lys Met Val Gly Asp Val Thr Gly
 80 85 90
 gcc cag gcc tat gcc tcc acc gcc aag tgc ctg aac atc tgg gcc ctg 397
 Ala Gln Ala Tyr Ala Ser Thr Ala Lys Cys Leu Asn Ile Trp Ala Leu
 95 100 105 110
 att ttg ggc atc ttc atg acc att ctg ctc atc atc atc cca gtg ttg 445
 Ile Leu Gly Ile Phe Met Thr Ile Leu Leu Ile Ile Ile Pro Val Leu
 115 120 125
 gtc gtc cag gcc cag cga tag at caggaggcat cattgaggcc aggagctctg 498
 Val Val Gln Ala Gln Arg *
 130

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cccgtagagct gtatccacgt actctatctt ccattcttcg cctgccccca gaggccagag 558
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ggatcccagc gcccgatcc cggcgcccca acccccacgc ccgcctccgc caactttcac 240
gctgcctcgg cggcccggcc cggctcgacg cca atg gtg gag gcc ata gtg gag 294
                               Met Val Glu Ala Ile Val Glu
                               1                               5

ttt gac tac cag gcc cag cac gat gat gag ctg acg atc agc gtg ggt 342
Phe Asp Tyr Gln Ala Gln His Asp Asp Glu Leu Thr Ile Ser Val Gly
          10                      15                      20

gaa atc atc acc aac atc agg aag gag gat gga ggc tgg tgg gag gga 390
Glu Ile Ile Thr Asn Ile Arg Lys Glu Asp Gly Gly Trp Trp Glu Gly
          25                      30                      35

cag atc aac ggc agg aga ggt ttg ttc cct gac aac ttt gta aga gaa 438
Gln Ile Asn Gly Arg Arg Gly Leu Phe Pro Asp Asn Phe Val Arg Glu
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ata aag aaa gag atg aag aaa gac cct ctc acc aac aaa gct cca gaa 486
Ile Lys Lys Glu Met Lys Lys Asp Pro Leu Thr Asn Lys Ala Pro Glu
          60                      65                      70

aag ccc ctg cac gaa gtg ccc agt gga aac tct ttg ctg tct tct gaa 534
Lys Pro Leu His Glu Val Pro Ser Gly Asn Ser Leu Leu Ser Ser Glu
          75                      80                      85

acg att tta aga acc aat aag aga ggc gag cga cgg agg cgc cgg tgc 582
Thr Ile Leu Arg Thr Asn Lys Arg Gly Glu Arg Arg Arg Arg Arg Cys
          90                      95                      100

cag gtg gca ttc agc tac ctg ccc cag aat gac gat gaa ctt gag ctg 630

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Gln Val Ala Phe Ser Tyr Leu Pro Gln Asn Asp Asp Glu Leu Glu Leu	
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aaa gtt ggc gac atc ata gag gtg gta gga gag gta gag gaa gga tgg	678
Lys Val Gly Asp Ile Ile Glu Val Val Gly Glu Val Glu Glu Gly Trp	
120 125 130 135	
tgg gaa ggt gtt ctc aac ggg aag act gga atg ttt cct tcc aac ttc	726
Trp Glu Gly Val Leu Asn Gly Lys Thr Gly Met Phe Pro Ser Asn Phe	
140 145 150	
atc aag gag ctg tca ggg gag tcg gat gag ctt ggc att tcc cag gat	774
Ile Lys Glu Leu Ser Gly Glu Ser Asp Glu Leu Gly Ile Ser Gln Asp	
155 160 165	
gag cag cta tcc aag tca agt tta agg gaa acc aca ggc tcc gag agt	822
Glu Gln Leu Ser Lys Ser Ser Leu Arg Glu Thr Thr Gly Ser Glu Ser	
170 175 180	
gat ggg ggt gac tca agc agc acc aag tct gaa ggt gcc aac ggg aca	870
Asp Gly Gly Asp Ser Ser Ser Thr Lys Ser Glu Gly Ala Asn Gly Thr	
185 190 195	
gtg gca act gca gca atc cag ccc aag aaa gtt aag gga gtg ggc ttt	918
Val Ala Thr Ala Ala Ile Gln Pro Lys Lys Val Lys Gly Val Gly Phe	
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gga gac att ttc aaa gac aag cca atc aaa cta aga cca agg tca att	966
Gly Asp Ile Phe Lys Asp Lys Pro Ile Lys Leu Arg Pro Arg Ser Ile	
220 225 230	
gaa gta gaa aat gac ttt ctg ccg gta gaa aag act att ggg aag aag	1014
Glu Val Glu Asn Asp Phe Leu Pro Val Glu Lys Thr Ile Gly Lys Lys	
235 240 245	
tta cct gca act aca gca act cca gac tca tca aaa aca gaa atg gac	1062
Leu Pro Ala Thr Thr Ala Thr Pro Asp Ser Ser Lys Thr Glu Met Asp	
250 255 260	
agc agg aca aag agc aag gat tac tgc aaa gta ata ttt cca tat gag	1110
Ser Arg Thr Lys Ser Lys Asp Tyr Cys Lys Val Ile Phe Pro Tyr Glu	
265 270 275	
gca cag aat gat gat gaa ttg aca atc aaa gaa gga gat ata gtc act	1158
Ala Gln Asn Asp Asp Glu Leu Thr Ile Lys Glu Gly Asp Ile Val Thr	
280 285 290 295	
ctc atc aat aag gac tgc atc gac gta ggc tgg tgg gaa gga gag ctg	1206
Leu Ile Asn Lys Asp Cys Ile Asp Val Gly Trp Trp Glu Gly Glu Leu	
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aac ggc aga cga ggc gtg ttc ccc gat aac ttc gtg aag tta ctt cca	1254
Asn Gly Arg Arg Gly Val Phe Pro Asp Asn Phe Val Lys Leu Leu Pro	
315 320 325	
ccg gac ttt gaa aag gaa ggg aat aga ccc aag aag cca ccg cct cca	1302
Pro Asp Phe Glu Lys Glu Gly Asn Arg Pro Lys Lys Pro Pro Pro Pro	

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Ser Ala Pro Val Ile Lys Gln Gly Ala Gly Thr Thr Glu Arg Lys His			
345	350	355	
gaa att aaa aag ata cct cct gaa aga cca gaa atg ctt cca aac aga			1398
Glu Ile Lys Lys Ile Pro Pro Glu Arg Pro Glu Met Leu Pro Asn Arg			
360	365	370	375
aca gaa gaa aaa gaa aga cca gag aga gag cca aaa ctg gat tta cag			1446
Thr Glu Glu Lys Glu Arg Pro Glu Arg Glu Pro Lys Leu Asp Leu Gln			
	380	385	390
aag ccc tcc gtt cct gcc ata ccg cca aaa aag cct cgg cca cct aag			1494
Lys Pro Ser Val Pro Ala Ile Pro Pro Lys Lys Pro Arg Pro Pro Lys			
	395	400	405
acc aat tct ctc agc aga cct ggc gca ctg ccc ccg aga agg ccg gag			1542
Thr Asn Ser Leu Ser Arg Pro Gly Ala Leu Pro Pro Arg Arg Pro Glu			
	410	415	420
aga ccg gtg ggt ccg ctg aca cac acc agg ggt gac agt cca aag att			1590
Arg Pro Val Gly Pro Leu Thr His Thr Arg Gly Asp Ser Pro Lys Ile			
	425	430	435
gac ttg gcc ggc agt tcg cta tct ggc atc ctg gac aaa gat ctc tcg			1638
Asp Leu Ala Gly Ser Ser Leu Ser Gly Ile Leu Asp Lys Asp Leu Ser			
	440	445	450
gac cgc agc aat gac att gac tta gaa ggt ttt gac tcc gtg gta tca			1686
Asp Arg Ser Asn Asp Ile Asp Leu Glu Gly Phe Asp Ser Val Val Ser			
	460	465	470
tct act gag aaa ctc agt cat ccg acc aca agc aga cca aaa gct aca			1734
Ser Thr Glu Lys Leu Ser His Pro Thr Thr Ser Arg Pro Lys Ala Thr			
	475	480	485
ggg agg cgg cct ccg tcc cag tcc ctc aca tct tca tcc ctt tca agc			1782
Gly Arg Arg Pro Pro Ser Gln Ser Leu Thr Ser Ser Ser Leu Ser Ser			
	490	495	500
cct gat atc ttc gac tcc cca agt ccc gaa gag gat aag gag gaa cac			1830
Pro Asp Ile Phe Asp Ser Pro Ser Pro Glu Glu Asp Lys Glu Glu His			
	505	510	515
att tca ctt gcg cac aga gga gtg gac gcg tca aag aaa act tcc aag			1878
Ile Ser Leu Ala His Arg Gly Val Asp Ala Ser Lys Lys Thr Ser Lys			
	520	525	530
act gtt acc ata tcc caa gtg tct gac aac aaa gca tcc ctg ccg ccc			1926
Thr Val Thr Ile Ser Gln Val Ser Asp Asn Lys Ala Ser Leu Pro Pro			
	540	545	550
aag ccg ggg acc atg gca gca ggt ggc ggt ggg cca gcc cct ctg tcc			1974
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cgccgccgcc actgaggaag aagccggccc agccgccgcc gcgtccggac cctcgcgccct      180
ggatcccagc gccccgatcc cggcgcccca acccccacgc ccgcctccgc caactttcac      240
gctgcctcgg cggcccggcc cggctcgacg cca atg gtg gag gcc ata gtg gag      294
                               Met Val Glu Ala Ile Val Glu
                               1                               5

ttt gac tac cag gcc cag cac gat gat gag ctg acg atc agc gtg ggt      342
Phe Asp Tyr Gln Ala Gln His Asp Asp Glu Leu Thr Ile Ser Val Gly
                               10                               15                               20

gaa atc atc acc aac atc agg aag gag gat gga ggc tgg tgg gag gga      390
Glu Ile Ile Thr Asn Ile Arg Lys Glu Asp Gly Gly Trp Trp Glu Gly
                               25                               30                               35

cag atc aac ggc agg aga ggt ttg ttc cct gac aac ttt gta aga gaa      438
Gln Ile Asn Gly Arg Arg Gly Leu Phe Pro Asp Asn Phe Val Arg Glu
                               40                               45                               50                               55

ata aag aaa gag atg aag aaa gac cct ctc acc aac aaa gct cca gaa      486
Ile Lys Lys Glu Met Lys Lys Asp Pro Leu Thr Asn Lys Ala Pro Glu
                               60                               65                               70

aag ccc ctg cac gaa gtg ccc agt gga aac tct ttg ctg tct tct gaa      534
Lys Pro Leu His Glu Val Pro Ser Gly Asn Ser Leu Leu Ser Ser Glu
                               75                               80                               85

acg att tta aga acc aat aag aga ggc gag cga cgg agg cgc cgg tgc      582
Thr Ile Leu Arg Thr Asn Lys Arg Gly Glu Arg Arg Arg Arg Arg Cys
                               90                               95                               100

cag gtg gca ttc agc tac ctg ccc cag aat gac gat gaa ctt gag ctg      630
Gln Val Ala Phe Ser Tyr Leu Pro Gln Asn Asp Asp Glu Leu Glu Leu
                               105                               110                               115

aaa gtt ggc gac atc ata gag gtg gta gga gag gta gag gaa gga tgg      678
Lys Val Gly Asp Ile Ile Glu Val Val Gly Glu Val Glu Glu Gly Trp
                               120                               125                               130                               135

tgg gaa ggt gtt ctc aac ggg aag act gga atg ttt cct tcc aac ttc      726
Trp Glu Gly Val Leu Asn Gly Lys Thr Gly Met Phe Pro Ser Asn Phe
                               140                               145                               150

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gga gac att ttc aaa gac aag cca atc aaa cta aga cca agg tca att Gly Asp Ile Phe Lys Asp Lys Pro Ile Lys Leu Arg Pro Arg Ser Ile 220 225 230	966
gaa gta gaa aat gac ttt ctg ccg gta gaa aag act att ggg aag aag Glu Val Glu Asn Asp Phe Leu Pro Val Glu Lys Thr Ile Gly Lys Lys 235 240 245	1014
tta cct gca act aca gca act cca gac tca tca aaa aca gaa atg gac Leu Pro Ala Thr Thr Ala Thr Pro Asp Ser Ser Lys Thr Glu Met Asp 250 255 260	1062
agc agg aca aag agc aag gat tac tgc aaa gta ata ttt cca tat gag Ser Arg Thr Lys Ser Lys Asp Tyr Cys Lys Val Ile Phe Pro Tyr Glu 265 270 275	1110
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ccg gac ttt gaa aag gaa ggg aat aga ccc aag aag cca ccg cct cca Pro Asp Phe Glu Lys Glu Gly Asn Arg Pro Lys Lys Pro Pro Pro Pro 330 335 340	1302
tcc gct cct gtc atc aaa caa ggg gca ggc acc act gag aga aaa cat Ser Ala Pro Val Ile Lys Gln Gly Ala Gly Thr Thr Glu Arg Lys His 345 350 355	1350
gaa att aaa aag ata cct cct gaa aga cca gaa atg ctt cca aac aga Glu Ile Lys Lys Ile Pro Pro Glu Arg Pro Glu Met Leu Pro Asn Arg 360 365 370 375	1398
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aag	ccc	tcc	gtt	cct	gcc	ata	ccg	cca	aaa	aag	cct	cgg	cca	cct	aag		1494
Lys	Pro	Ser	Val	Pro	Ala	Ile	Pro	Pro	Lys	Lys	Pro	Arg	Pro	Pro	Lys		
			395					400					405				
acc	aat	tct	ctc	agc	aga	cct	ggc	gca	ctg	ccc	ccg	aga	agg	ccg	gag		1542
Thr	Asn	Ser	Leu	Ser	Arg	Pro	Gly	Ala	Leu	Pro	Pro	Arg	Arg	Pro	Glu		
		410					415					420					
aga	ccg	gtg	ggg	ccg	ctg	aca	cac	acc	agg	ggg	gac	agt	cca	aag	att		1590
Arg	Pro	Val	Gly	Pro	Leu	Thr	His	Thr	Arg	Gly	Asp	Ser	Pro	Lys	Ile		
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gac	ttg	gcc	ggc	agt	tcg	cta	tct	ggc	atc	ctg	gac	aaa	gat	ctc	tcg		1638
Asp	Leu	Ala	Gly	Ser	Ser	Leu	Ser	Gly	Ile	Leu	Asp	Lys	Asp	Leu	Ser		
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gac	cgc	agc	aat	gac	att	gac	tta	gaa	ggg	ttt	gac	tcc	gtg	gta	tca		1686
Asp	Arg	Ser	Asn	Asp	Ile	Asp	Leu	Glu	Gly	Phe	Asp	Ser	Val	Val	Ser		
			460						465					470			
tct	act	gag	aaa	ctc	agt	cat	ccg	acc	aca	agc	aga	cca	aaa	gct	aca		1734
Ser	Thr	Glu	Lys	Leu	Ser	His	Pro	Thr	Thr	Ser	Arg	Pro	Lys	Ala	Thr		
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Gly	Arg	Arg	Pro	Pro	Ser	Gln	Ser	Leu	Thr	Ser	Val	Ser	Asp	Asn	Lys		
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Ala	Ser	Leu	Pro	Pro	Lys	Pro	Gly	Thr	Met	Ala	Ala	Gly	Gly	Gly	Gly		
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cca	gcc	cct	ctg	tcc	tca	gcg	gcg	ccc	tcc	ccc	ctg	tca	tcc	tct	ttg		1878
Pro	Ala	Pro	Leu	Ser	Ser	Ala	Ala	Pro	Ser	Pro	Leu	Ser	Ser	Ser	Leu		
		520			525				530						535		
gga	aca	gct	gga	cac	aga	gcc	aac	tcc	ccg	tct	ctg	ttc	ggc	acg	gaa		1926
Gly	Thr	Ala	Gly	His	Arg	Ala	Asn	Ser	Pro	Ser	Leu	Phe	Gly	Thr	Glu		
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gga	aaa	cca	aag	atg	gag	cct	gcg	gcc	agc	agc	cag	gcg	gcc	gtg	gag		1974
Gly	Lys	Pro	Lys	Met	Glu	Pro	Ala	Ala	Ser	Ser	Gln	Ala	Ala	Val	Glu		
			555					560					565				
gag	cta	agg	aca	cag	gtc	cgc	gag	ctg	agg	agc	atc	atc	gag	acc	atg		2022
Glu	Leu	Arg	Thr	Gln	Val	Arg	Glu	Leu	Arg	Ser	Ile	Ile	Glu	Thr	Met		
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aag	gac	cag	cag	aaa	cga	gag	att	aaa	cag	tta	ttg	tct	gag	ttg	gat		2070
Lys	Asp	Gln	Gln	Lys	Arg	Glu	Ile	Lys	Gln	Leu	Leu	Ser	Glu	Leu	Asp		
		585				590					595						
gaa	gag	aag	aaa	atc	cgg	ctt	cgg	ttg	cag	atg	gaa	gtg	aac	gac	ata		2118
Glu	Glu	Lys	Lys	Ile	Arg	Leu	Arg	Leu	Gln	Met	Glu	Val	Asn	Asp	Ile		

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Lys Lys Ala Leu Gln Ser Lys *				
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Lys Lys Lys Lys Arg Pro Glu Ile Ser Ala Pro Gln Asn Phe Gln His	
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Arg Val His Thr Ser Phe Asp Pro Lys Glu Gly Lys Phe Val Gly Leu	
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Pro Pro Gln Trp Gln Asn Ile Leu Asp Thr Leu Arg Arg Pro Lys Pro	
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Val Val Asp Pro Ser Arg Ile Thr Arg Val Gln Leu Gln Pro Met Lys	
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aca gtg gtg cgg ggc agc gcg atg cct gtg gat ggc tac atc tcg ggg	655
Thr Val Val Arg Gly Ser Ala Met Pro Val Asp Gly Tyr Ile Ser Gly	
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Leu Leu Asn Asp Ile Gln Lys Leu Ser Val Ile Ser Ser Asn Thr Leu	
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165 170 175 180	
ggc ccc gcc gag ttt cag ggt gcc tcg cag cgc tgt ctg cag ctg ggt	991
Gly Pro Ala Glu Phe Gln Gly Ala Ser Gln Arg Cys Leu Gln Leu Gly	
185 190 195	
gcc tgc ctg cag agc tcc cca cca gga gcc tcg ccc ccc acg ggc acc	1039
Ala Cys Leu Gln Ser Ser Pro Pro Gly Ala Ser Pro Pro Thr Gly Thr	
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aat agg cat gga atg aag gct gcc aag cat ggc tct gag gag gcc cgg	1087
Asn Arg His Gly Met Lys Ala Ala Lys His Gly Ser Glu Glu Ala Arg	
215 220 225	

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cag gga gga gcc ctc aca gac atc gtc tcc caa gtc agg ctg aat gag Gln Gly Gly Ala Leu Thr Asp Ile Val Ser Gln Val Arg Leu Asn Glu 485 490 495 500	1903
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ctg cat gct cag ggt gtc atc cac cgg gac atc aag agt gac tcc atc Leu His Ala Gln Gly Val Ile His Arg Asp Ile Lys Ser Asp Ser Ile 520 525 530	1999
ctg ctg acc ctc gat ggc agg gtg aag ctc tcg gac ttc gga ttc tgt Leu Leu Thr Leu Asp Gly Arg Val Lys Leu Ser Asp Phe Gly Phe Cys 535 540 545	2047
gct cag atc agc aaa gac gtc cct aag agg aag tcc ctg gtg gga acc Ala Gln Ile Ser Lys Asp Val Pro Lys Arg Lys Ser Leu Val Gly Thr 550 555 560	2095
ccc tac tgg atg gct cct gaa gtg atc tcc agg tct ttg tat gcc act Pro Tyr Trp Met Ala Pro Glu Val Ile Ser Arg Ser Leu Tyr Ala Thr 565 570 575 580	2143
gag gtg gat atc tgg tct ctg ggc atc atg gtg att gag atg gta gat Glu Val Asp Ile Trp Ser Leu Gly Ile Met Val Ile Glu Met Val Asp 585 590 595	2191
ggg gag cca ccg tac ttc agt gac tcc cca gtg caa gcc atg aag agg Gly Glu Pro Pro Tyr Phe Ser Asp Ser Pro Val Gln Ala Met Lys Arg 600 605 610	2239
ctc cgg gac agc ccc cca ccc aag ctg aaa aac tct cac aag gtc tcc Leu Arg Asp Ser Pro Pro Pro Lys Leu Lys Asn Ser His Lys Val Ser 615 620 625	2287
cca gtg ctg cga gac ttc ctg gag cgg atg ctg gtg cgg gac ccc caa Pro Val Leu Arg Asp Phe Leu Glu Arg Met Leu Val Arg Asp Pro Gln 630 635 640	2335
gag aga gcc aca gcc cag gag ctc cta gac cac ccc ttc ctg ctg cag Glu Arg Ala Thr Ala Gln Glu Leu Leu Asp His Pro Phe Leu Leu Gln 645 650 655 660	2383
aca ggg cta cct gag tgc ctg gtg ccc ctg atc cag ctc tac cga aag Thr Gly Leu Pro Glu Cys Leu Val Pro Leu Ile Gln Leu Tyr Arg Lys 665 670 675	2431
cag acc tcc acc tgc tga gccac cccaagtatg cctgccacct acgcccacag	2485

Gln Thr Ser Thr Cys *

680

gcagggcaca ctgggcagcc agcctgccgg caggacttgc ctgcctcctc ctctcagtat 2545
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ccaggccgga cctgccccct cagtgtctct ccctcccagag tccccagatg gagaccctt 2665
tctacaggat gacccttga tatttgcaca gggatatttc taagaaacgc agaggccagc 2725
gttcctggcc tctgcagcca acacagtaga aaaggctgct gtgggtttttt aaaggcagtt 2785
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<211> 1968

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ggtgacaggc gttgagacca ccgaaggga ccc atg gct agg atc agt ttt tcc 174
Met Ala Arg Ile Ser Phe Ser
1 5
tac ctc tgc cca gcc tcc tgg tac ttc act gtg ccc aca gtg agt cca 222
Tyr Leu Cys Pro Ala Ser Trp Tyr Phe Thr Val Pro Thr Val Ser Pro
10 15 20
ttt ctc cgt cag cgg gtg gca ttc ctg gga ctc ttc ttc ata tcc tgt 270
Phe Leu Arg Gln Arg Val Ala Phe Leu Gly Leu Phe Phe Ile Ser Cys
25 30 35
ctc ctt tta ctt atg tta atc ata gac ttt cga cat tgg agt gct tca 318
Leu Leu Leu Leu Met Leu Ile Ile Asp Phe Arg His Trp Ser Ala Ser
40 45 50 55

tta cca cga gat agg caa tac gaa agg tat ttg gct cga gta ggg gag	366
Leu Pro Arg Asp Arg Gln Tyr Glu Arg Tyr Leu Ala Arg Val Gly Glu	
60 65 70	
ctt gaa gct act gac act gaa gac cca aat ctg aat tat gga ctt gtt	414
Leu Glu Ala Thr Asp Thr Glu Asp Pro Asn Leu Asn Tyr Gly Leu Val	
75 80 85	
gtt gac tgt ggc agc agt ggt tcc cgg att ttt gtt tat ttc tgg cca	462
Val Asp Cys Gly Ser Ser Gly Ser Arg Ile Phe Val Tyr Phe Trp Pro	
90 95 100	
aga cat aat ggg aac ccc cat gac ttg ctg gac atc aaa cag atg aga	510
Arg His Asn Gly Asn Pro His Asp Leu Leu Asp Ile Lys Gln Met Arg	
105 110 115	
gac cgc aac agc caa cca gtg gtt aaa aaa atc aag cca gga atc tct	558
Asp Arg Asn Ser Gln Pro Val Val Lys Lys Ile Lys Pro Gly Ile Ser	
120 125 130 135	
gca atg gca gac act cca gaa cat gcc agt gat tac ctt cgt cct ctg	606
Ala Met Ala Asp Thr Pro Glu His Ala Ser Asp Tyr Leu Arg Pro Leu	
140 145 150	
ctg agc ttt gct gct gct cat gtg cct gtg aag aag cac aag gag acc	654
Leu Ser Phe Ala Ala Ala His Val Pro Val Lys Lys His Lys Glu Thr	
155 160 165	
cct ctt tac atc ctc tgc aca gca ggc atg agg ctt ctc cct gag agg	702
Pro Leu Tyr Ile Leu Cys Thr Ala Gly Met Arg Leu Leu Pro Glu Arg	
170 175 180	
aag cag ttg gct atc ttg gct gac cta gtg aaa gat tta cca ctg gag	750
Lys Gln Leu Ala Ile Leu Ala Asp Leu Val Lys Asp Leu Pro Leu Glu	
185 190 195	
ttt gac ttc ctc ttt tca cag tct caa gca gaa gtg atc tct ggg aag	798
Phe Asp Phe Leu Phe Ser Gln Ser Gln Ala Glu Val Ile Ser Gly Lys	
200 205 210 215	
cag gaa ggg gtt tat gca tgg att gga atc aac ttt gtt ttg gga aga	846
Gln Glu Gly Val Tyr Ala Trp Ile Gly Ile Asn Phe Val Leu Gly Arg	
220 225 230	
ttc gac cac gag gat gaa tca gat gct gag gct acc cag gaa ttg gca	894
Phe Asp His Glu Asp Glu Ser Asp Ala Glu Ala Thr Gln Glu Leu Ala	
235 240 245	
gca gga cgg aga agg aca gta ggg ata ctg gat atg gga gga gcc tct	942
Ala Gly Arg Arg Arg Thr Val Gly Ile Leu Asp Met Gly Gly Ala Ser	
250 255 260	
ctc caa att gct tat gaa gtt cct acc tca acc tct gtc ctt cct gca	990
Leu Gln Ile Ala Tyr Glu Val Pro Thr Ser Thr Ser Val Leu Pro Ala	
265 270 275	

aag cag gaa gaa gct gcc aag atc ctg ctg gct gag ttc aac ctg ggc Lys Gln Glu Glu Ala Ala Lys Ile Leu Leu Ala Glu Phe Asn Leu Gly 280 285 290 295	1038
tgt gat gtg caa cac act gaa cac gtg tac agg gtt tat gtc aca act Cys Asp Val Gln His Thr Glu His Val Tyr Arg Val Tyr Val Thr Thr 300 305 310	1086
ttt ctg ggt ttc gga ggc aac ttt gcc cgg cag cgc tac gaa gac ctt Phe Leu Gly Phe Gly Gly Asn Phe Ala Arg Gln Arg Tyr Glu Asp Leu 315 320 325	1134
gtt ctg aat gaa act ctt aac aaa aac aga ttg ctt ggt cag aag aca Val Leu Asn Glu Thr Leu Asn Lys Asn Arg Leu Leu Gly Gln Lys Thr 330 335 340	1182
ggt ctg agt ccc gac aat cca ttt ctg gat ccc tgc ctg cca gtg gga Gly Leu Ser Pro Asp Asn Pro Phe Leu Asp Pro Cys Leu Pro Val Gly 345 350 355	1230
ctc aca gat gtg gtg gag agg aac agc caa gtc tta cat gtc cga gga Leu Thr Asp Val Val Glu Arg Asn Ser Gln Val Leu His Val Arg Gly 360 365 370 375	1278
aga gga gac tgg gtg tct tgt ggg gca atg ctg agc ccc ctg ctg gct Arg Gly Asp Trp Val Ser Cys Gly Ala Met Leu Ser Pro Leu Leu Ala 380 385 390	1326
cgc tcc aac acc agc cag gcc tca ctc aat ggc ata tat caa tcg cct Arg Ser Asn Thr Ser Gln Ala Ser Leu Asn Gly Ile Tyr Gln Ser Pro 395 400 405	1374
att gac ttc aac aac agc gag ttc tac ggc ttc tct gag ttt ttt tat Ile Asp Phe Asn Asn Ser Glu Phe Tyr Gly Phe Ser Glu Phe Phe Tyr 410 415 420	1422
tgt aca gag gat gtg ttg cgc att ggt ggc cgc tac cat ggg cca aca Cys Thr Glu Asp Val Leu Arg Ile Gly Gly Arg Tyr His Gly Pro Thr 425 430 435	1470
ttt gcc aag gct gct cag gat tac tgt ggc atg gct tgg tcg gta cta Phe Ala Lys Ala Ala Gln Asp Tyr Cys Gly Met Ala Trp Ser Val Leu 440 445 450 455	1518
act cag aga ttc aag aat ggc ctc ttt tca tca cat gca gat gag cat Thr Gln Arg Phe Lys Asn Gly Leu Phe Ser Ser His Ala Asp Glu His 460 465 470	1566
cga ctc aaa tat cag tgt ttt aaa tcg gct tgg atg tac caa gtc tta Arg Leu Lys Tyr Gln Cys Phe Lys Ser Ala Trp Met Tyr Gln Val Leu 475 480 485	1614
cat gaa gga ttc cac ttt ccc tat gac tac cca aac ctg cgg aca gcc His Glu Gly Phe His Phe Pro Tyr Asp Tyr Pro Asn Leu Arg Thr Ala 490 495 500	1662
cag ctg gtg tat gac cga gag gtt cag tgg acg ctg gga gcc att cta	1710

cca atc atc act ggt agc aaa gat tta cag aat gtc aat atc aca ctg	513
Pro Ile Ile Thr Gly Ser Lys Asp Leu Gln Asn Val Asn Ile Thr Leu	
20 25 30	
cgc atc atc ttc cag cct gtt gct agc cag ctt cct cgc atc ttc acc	561
Arg Ile Ile Phe Gln Pro Val Ala Ser Gln Leu Pro Arg Ile Phe Thr	
35 40 45	
agc atc gga gag gac tat gat gag cct gtg ctg acg tac atc acg acc	609
Ser Ile Gly Glu Asp Tyr Asp Glu Pro Val Leu Thr Tyr Ile Thr Thr	
50 55 60	
gag atc ctc aag tca gtg gtg gct cgc ttt gat gct gga gaa gtt atc	657
Glu Ile Leu Lys Ser Val Val Ala Arg Phe Asp Ala Gly Glu Val Ile	
65 70 75 80	
act cag aga gag ctg gtc tcc agg cag gtg agc aac gac ctt acg gag	705
Thr Gln Arg Glu Leu Val Ser Arg Gln Val Ser Asn Asp Leu Thr Glu	
85 90 95	
caa gca gcc aca ttt ggg ctc atc ctg gac gac gtg tcc ttg aca tat	753
Gln Ala Ala Thr Phe Gly Leu Ile Leu Asp Asp Val Ser Leu Thr Tyr	
100 105 110	
ctg acc ttt gga aag gag ttc aca gaa gca gtg gaa gcc aaa cag gtg	801
Leu Thr Phe Gly Lys Glu Phe Thr Glu Ala Val Glu Ala Lys Gln Val	
115 120 125	
gct cag cag gaa gca gag agg gcc aga ttt gtg aag gaa aag gct gag	849
Ala Gln Gln Glu Ala Glu Arg Ala Arg Phe Val Lys Glu Lys Ala Glu	
130 135 140	
cag cag aaa aag gct gag cag cag aaa aag gtt gag cag cag aaa aag	897
Gln Gln Lys Lys Ala Glu Gln Gln Lys Lys Val Glu Gln Gln Lys Lys	
145 150 155 160	
gca gcc gtg atc tct gct gag ggc gac tcc aag gca acc gag ctg att	945
Ala Ala Val Ile Ser Ala Glu Gly Asp Ser Lys Ala Thr Glu Leu Ile	
165 170 175	
gcc aac tca ctg gcc acc gcg ggg gac ggc ctg atg gag ctg tgc aag	993
Ala Asn Ser Leu Ala Thr Ala Gly Asp Gly Leu Met Glu Leu Cys Lys	
180 185 190	
ttg gaa gcc gcg gag gct ctc gga aca tga c ctacctgccg gcggggcagt	1044
Leu Glu Ala Ala Glu Ala Leu Gly Thr *	
195 200	
ccgctcctcc ggctgcccc tgagggccca ccctgcctgc acctccgcag gctgactggg	1104
ccacagcccc aatgattctt aacactgcct taccctcccta cccagaaat cactgaaatt	1164
tcataattgg cttaaagtga aggaaataaa agtaaaatca cttcagaact cttaaaaaaa	1224
aaaaa	1229

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 <213> Homo sapiens

<220>
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 <222> (88)..(1653)

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ggagctgcca atcaaaagtg gcattac      atg aaa aat ata aaa gca ctt gtg      111
                                   Met Lys Asn Ile Lys Ala Leu Val
                                   1                               5

gcc ttt cat agc act gcc ttg gat aag gaa att aca tca gca aat tat      159
Ala Phe His Ser Thr Ala Leu Asp Lys Glu Ile Thr Ser Ala Asn Tyr
    10                               15                               20

gct ggt gtc tgt aca tca tct gtg att aaa gaa gaa aac att gat caa      207
Ala Gly Val Cys Thr Ser Ser Val Ile Lys Glu Glu Asn Ile Asp Gln
    25                               30                               35                               40

cca gga tac tgt tat ctc tca cct gat gga aag aga aaa act atg ctc      255
Pro Gly Tyr Cys Tyr Leu Ser Pro Asp Gly Lys Arg Lys Thr Met Leu
                                45                               50                               55

tgc ttg gct tgt gga caa tcc atg aga aca gag aaa gga ctg aaa caa      303
Cys Leu Ala Cys Gly Gln Ser Met Arg Thr Glu Lys Gly Leu Lys Gln
                                60                               65                               70

ttg ctt cca ggg gtt cca ttc ctc tgt att tca ggc acc aag act cag      351
Leu Leu Pro Gly Val Pro Phe Leu Cys Ile Ser Gly Thr Lys Thr Gln
                                75                               80                               85

aag ccc ttc tta caa ggg ccc ttc aag gtc atc agt gtg gct gag gtt      399
Lys Pro Phe Leu Gln Gly Pro Phe Lys Val Ile Ser Val Ala Glu Val
    90                               95                               100

gat ttg tcg tgt gac aag gct gaa aaa act cta agt tac tac caa gca      447
Asp Leu Ser Cys Asp Lys Ala Glu Lys Thr Leu Ser Tyr Tyr Gln Ala
   105                               110                               115                               120

cgt cta ttg tct tta cgg atg aag acc tgc acg caa gct gca tct cac      495
Arg Leu Leu Ser Leu Arg Met Lys Thr Cys Thr Gln Ala Ala Ser His
                                125                               130                               135

agt ggc atg gca gcc aca cac cag aag gca gtg aaa ata att gca tac      543
Ser Gly Met Ala Ala Thr His Gln Lys Ala Val Lys Ile Ile Ala Tyr
                                140                               145                               150

aaa aat ggg gat ggg tat cgt aat ggg aag tta att gtg gct gga aca      591
Lys Asn Gly Asp Gly Tyr Arg Asn Gly Lys Leu Ile Val Ala Gly Thr

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gtc aag ccg agc aac ctg tat aag cag ccc aac aca aaa cga gtg tgg 1311
Val Lys Pro Ser Asn Leu Tyr Lys Gln Pro Asn Thr Lys Arg Val Trp
395 400 405

att tat cta aat gga ggc aga cct gaa gat ggc act tat gcc tgg ggc 1359
Ile Tyr Leu Asn Gly Gly Arg Pro Glu Asp Gly Thr Tyr Ala Trp Gly
410 415 420

aaa act att tca gag ctg ctg caa gac tgc tcc tct cgt ctc aaa atg 1407
Lys Thr Ile Ser Glu Leu Leu Gln Asp Cys Ser Ser Arg Leu Lys Met
425 430 435 440

acc cac cca gct aga gca ctg tac acc ccc agt gga gag cca att cag 1455
Thr His Pro Ala Arg Ala Leu Tyr Thr Pro Ser Gly Glu Pro Ile Gln
445 450 455

tcc tgg gac gac ata gag cga gat atg gtc atc tgt gtg tct atg gga 1503
Ser Trp Asp Asp Ile Glu Arg Asp Met Val Ile Cys Val Ser Met Gly
460 465 470

cat ggt ttc aaa acc cca aaa gag tta aaa caa ctg atg gag atc aga 1551
His Gly Phe Lys Thr Pro Lys Glu Leu Lys Gln Leu Met Glu Ile Arg
475 480 485

gca aat tat gcc aga atc cga agg cag cag ggc cct caa gcc aca gac 1599
Ala Asn Tyr Ala Arg Ile Arg Arg Gln Gln Gly Pro Gln Ala Thr Asp
490 495 500

att gtg gtg tca cca tcc acg aag ctg ctg tct ctg gca cat ctc cac 1647
Ile Val Val Ser Pro Ser Thr Lys Leu Leu Ser Leu Ala His Leu His
505 510 515 520

aat taa ctccatcag aaccatcgga tttctgctg ttttttctg gaaagaaaaac 1703
Asn *

tttctttacc cacttataaaa cagaagactg tgacaagaag gccattatt tccatcgctg 1763

aagactctaa atttgcaaaa tcttctaaat aacaatcctg catagtttat taaaaaaaaat 1823

tagtcgtaaaa atttatcctt caaaaaatctg catttttaaata aaaccctgac agtgattttct 1883

caagactgta aagatattag tctgagaatg caactctaac agactgctct gggcatcttt 1943

tctctttgcc ttggccaggc ctctcagaat tgagtgagcg tgtgactcca tttgcacagt 2003

gggacagata gtacaactga aataaaaaagt ggaggcctct gcaaaaaata aaaaataaaaa 2063

aataaattta tccttcaaaa taactcagtt ttttcaatgg gcctatTTTTT aagaatgaac 2123

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agctgtaaca tgtaaatcag aactacctgg catcttcctg aacaagactt tcaatagggg      180
ccagt      atg ctt cgc ttc atc cag aag ttt tct caa gca tct tca aag      227
           Met Leu Arg Phe Ile Gln Lys Phe Ser Gln Ala Ser Ser Lys
           1             5             10

ata ctg aag tac tct ttc cca gtg gga cta aga acc agc aga aca gat      275
Ile Leu Lys Tyr Ser Phe Pro Val Gly Leu Arg Thr Ser Arg Thr Asp
 15             20             25             30

ata ctt tct ctc aag atg tct ctc cag caa aac ttt tcc cca tgt cca      323
Ile Leu Ser Leu Lys Met Ser Leu Gln Gln Asn Phe Ser Pro Cys Pro
           35             40             45

agg cct tgg ctt tcc tca tca ttt cca gcg tat atg agc aag aca cag      371
Arg Pro Trp Leu Ser Ser Ser Phe Pro Ala Tyr Met Ser Lys Thr Gln
           50             55             60

tgc tat cat aca tcc ccc tgc agc ttt aaa aag cag cag aag caa gca      419
Cys Tyr His Thr Ser Pro Cys Ser Phe Lys Lys Gln Gln Lys Gln Ala
           65             70             75

ctt cta gcc aga ccc tca agc acc atc act tac cta act gac agc cca      467
Leu Leu Ala Arg Pro Ser Ser Thr Ile Thr Tyr Leu Thr Asp Ser Pro
           80             85             90

aag cca gca tta tgt gta act ctg gca gga cta atc ccc ttc gtt gct      515
Lys Pro Ala Leu Cys Val Thr Leu Ala Gly Leu Ile Pro Phe Val Ala
 95             100             105             110

cca cca ctg gtc atg ctg atg aca aaa act tat att ccc ata tta gct      563
Pro Pro Leu Val Met Leu Met Thr Lys Thr Tyr Ile Pro Ile Leu Ala
           115             120             125

ttt act cag atg gct tat gga gcc agt ttc cta tct ttc ttg ggt ggg      611
Phe Thr Gln Met Ala Tyr Gly Ala Ser Phe Leu Ser Phe Leu Gly Gly
           130             135             140

atc aga tgg ggt ttt gct cta cca gaa ggt agt cca gcc aaa cca gac      659

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tac ctt aat tta gct agc agt gca gct cct ctt ttc ttt tca tgg ttt	707
Tyr Leu Asn Leu Ala Ser Ser Ala Ala Pro Leu Phe Phe Ser Trp Phe	
160 165 170	
gcc ttc ctt att tct gaa aga ctt agt gaa gcc ata gtc aca gta ata	755
Ala Phe Leu Ile Ser Glu Arg Leu Ser Glu Ala Ile Val Thr Val Ile	
175 180 185 190	
atg ggt atg gga gta gca ttc cac ctt gaa ctt ttt ctc tta cca cat	803
Met Gly Met Gly Val Ala Phe His Leu Glu Leu Phe Leu Leu Pro His	
195 200 205	
tat ccc aac tgg ttt aaa gcc ctg agg ata gta gtc act tta ttg gcc	851
Tyr Pro Asn Trp Phe Lys Ala Leu Arg Ile Val Val Thr Leu Leu Ala	
210 215 220	
act ttt tca ttt ata atc act tta gta gtt aaa agt agt ttt cca gaa	899
Thr Phe Ser Phe Ile Ile Thr Leu Val Val Lys Ser Ser Phe Pro Glu	
225 230 235	
aaa gga cat aag aga cct ggt caa gta taa a aaatataaaa gtctgggaag	950
Lys Gly His Lys Arg Pro Gly Gln Val *	
240 245	
tgaggagcac ctctgcccag ctgctgcccc gtctgggaag tgaggagcgc ctctgcctgg	1010
ccgcctgacc atctgggaag tgtgacaagc gcctctgccc ggccgctgtg caaccttcca	1070
cgtgtgaagt gacagccttg tgtgtgatct tttctgtctt ccccaagttt gcattttcga	1130
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aacatgtgtn tgccagctac acctttctcn acttctgttt ggcttttttt cccacacca	1250
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acttgagcaa aagcttgaaa atccctgaca agtacttntc atctcatagt atattagttt	1370
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gc	1432

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cctctctcag tccaaaagcg gcttttgggtt cggcgcagag agaccggggg gtctagcttt 180
tcctcgaaaa gcgccgcctt gcccttggcc ccgagaacag acaaagagca ccgcagggcc 240
gatcacgctg ggggcgctga ggccggcc atg gtc atg gaa gtg ggc acc ctg 292
Met Val Met Glu Val Gly Thr Leu
1 5
gac gct gga ggc ctg cgg gcg ctg ctg ggg gag cga gcg gcg caa tgc 340
Asp Ala Gly Gly Leu Arg Ala Leu Leu Gly Glu Arg Ala Ala Gln Cys
10 15 20
ctg ctg ctg gac tgc cgc tcc ttc ttc gct ttc aac gcc ggc cac atc 388
Leu Leu Leu Asp Cys Arg Ser Phe Phe Ala Phe Asn Ala Gly His Ile
25 30 35 40
gcc ggc tct gtc aac gtg cgc ttc agc acc atc gtg cgg cgc cgg gcc 436
Ala Gly Ser Val Asn Val Arg Phe Ser Thr Ile Val Arg Arg Arg Ala
45 50 55
aag ggc gcc atg ggc ctg gag cac atc gtg ccc aac gcc gag ctc cgc 484
Lys Gly Ala Met Gly Leu Glu His Ile Val Pro Asn Ala Glu Leu Arg
60 65 70
ggc cgc ctg ctg gcc ggc gcc tac cac gcc gtg gtg ttg ctg gac gag 532
Gly Arg Leu Leu Ala Gly Ala Tyr His Ala Val Val Leu Leu Asp Glu
75 80 85
cgc agc gcc gcc ctg gac ggc gcc aag cgc gac ggc acc ctg gcc ctg 580
Arg Ser Ala Ala Leu Asp Gly Ala Lys Arg Asp Gly Thr Leu Ala Leu
90 95 100
gcg gcc ggc gcg ctc tgc cgc gag gcg cgc gcc gcg caa gtc ttc ttc 628
Ala Ala Gly Ala Leu Cys Arg Glu Ala Arg Ala Ala Gln Val Phe Phe
105 110 115 120
ctc aaa gga gga tac gaa gcg ttt tgc gct tcc tgc ccg gag ctg tgc 676
Leu Lys Gly Gly Tyr Glu Ala Phe Ser Ala Ser Cys Pro Glu Leu Cys
125 130 135
agc aaa cag tcg acc ccc atg ggg ctc agc ctt ccc ctg agt act agc 724
Ser Lys Gln Ser Thr Pro Met Gly Leu Ser Leu Pro Leu Ser Thr Ser
140 145 150
gtc cct gac agc gcg gaa tct ggg tgc agt tcc tgc agt acc cca ctc 772
Val Pro Asp Ser Ala Glu Ser Gly Cys Ser Ser Cys Ser Thr Pro Leu
155 160 165
tac gat cag ggt ggc ccg gtg gaa atc ctg ccc ttt ctg tac ctg ggc 820
Tyr Asp Gln Gly Gly Pro Val Glu Ile Leu Pro Phe Leu Tyr Leu Gly
170 175 180

agt gcg tat cac gct tcc cgc aag gac atg ctg gat gcc ttg ggc ata	868
Ser Ala Tyr His Ala Ser Arg Lys Asp Met Leu Asp Ala Leu Gly Ile	
185 190 195 200	
act gcc ttg atc aac gtc tca gcc aat tgt ccc aac cat ttt gag ggt	916
Thr Ala Leu Ile Asn Val Ser Ala Asn Cys Pro Asn His Phe Glu Gly	
205 210 215	
cac tac cag tac aag agc atc cct gtg gag gac aac cac aag gca gac	964
His Tyr Gln Tyr Lys Ser Ile Pro Val Glu Asp Asn His Lys Ala Asp	
220 225 230	
atc agc tcc tgg ttc aac gag gcc att gac ttc ata gac tcc atc aag	1012
Ile Ser Ser Trp Phe Asn Glu Ala Ile Asp Phe Ile Asp Ser Ile Lys	
235 240 245	
aat gct gga gga agg gtg ttt gtc cac tgc cag gca ggc att tcc cgg	1060
Asn Ala Gly Gly Arg Val Phe Val His Cys Gln Ala Gly Ile Ser Arg	
250 255 260	
tca gcc acc atc tgc ctt gct tac ctt atg agg act aat cga gtc aag	1108
Ser Ala Thr Ile Cys Leu Ala Tyr Leu Met Arg Thr Asn Arg Val Lys	
265 270 275 280	
ctg gac gag gcc ttt gag ttt gtg aag cag agg cga agc atc atc tct	1156
Leu Asp Glu Ala Phe Glu Phe Val Lys Gln Arg Arg Ser Ile Ile Ser	
285 290 295	
ccc aac ttc agc ttc atg ggc cag ctg ctg cag ttt gag tcc cag gtg	1204
Pro Asn Phe Ser Phe Met Gly Gln Leu Leu Gln Phe Glu Ser Gln Val	
300 305 310	
ctg gct ccg cac tgt tcg gca gag gct ggg agc ccc gcc atg gct gtg	1252
Leu Ala Pro His Cys Ser Ala Glu Ala Gly Ser Pro Ala Met Ala Val	
315 320 325	
ctc gac cga ggc acc tcc acc acc acc gtg ttc aac ttc ccc gtc tcc	1300
Leu Asp Arg Gly Thr Ser Thr Thr Thr Val Phe Asn Phe Pro Val Ser	
330 335 340	
atc cct gtc cac tcc acg aac agt gcg ctg agc tac ctt cag agc ccc	1348
Ile Pro Val His Ser Thr Asn Ser Ala Leu Ser Tyr Leu Gln Ser Pro	
345 350 355 360	
att acg acc tct ccc agc tgc tga aaggccacgg gaggtgaggc tcttcacatc	1402
Ile Thr Thr Ser Pro Ser Cys *	
365	
ccattggggac tccatgctcc ttgagaggag aaatgcaata actctgggag gggctcgaga	1462
gggctgggtcc ttatttatatt aacttcaccc gagttcctct gggtttctaa gcagttatgg	1522
tgatgactta gcgtcaagac atttgctgaa ctcagcacat tcgggaccaa tatatagtgg	1582
gtacatcaag tccatctgac aaaatggggc agaagagaaa ggactcagtg tgtgatccgg	1642
tttttttttg ctgcgccctg ttttttgtag aatctcttca tgcttgacat acctaccagt	1702

attattcccg acgacacata tacatatgag aatatacctt atttattttt gtgtaggtgt 1762
 ctgccttcac aaatgtcatt gtctactcct agaagaacca aatacctcaa tttttgtttt 1822
 tgagtactgt actatcctgt aaatatatct taagcaggtt tgttttcagc actgatggaa 1882
 aataccagtgt ttgggttttt ttttagttgc caacagttgt atgtttgctg attatttatg 1942
 acctgaaata atatatcttct tcttctaaga agacattttg ttacataagg atgacttttt 2002
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 cattatgatg tgtttatggt cacagaaatt tttgtaattt ctctatggta acaacttttt 180
 atgccttaag agtgtctctg aggcaggatt ctaagagatt ctctttgact caatcccaga 240
 tagaggataa atctcctggc aaagcccaga atg acc aca gcc ctg gaa cct 291
 Met Thr Thr Ala Leu Glu Pro
 1 5
 gag gac caa aaa gga ctt ctg ata att aag gca gag gac cat tac tgg 339
 Glu Asp Gln Lys Gly Leu Leu Ile Ile Lys Ala Glu Asp His Tyr Trp
 10 15 20
 gga cag gat tcc agc tca caa aag tgc agt cct cac agg agg gaa ctc 387
 Gly Gln Asp Ser Ser Ser Gln Lys Cys Ser Pro His Arg Arg Glu Leu
 25 30 35
 tat aga caa cac ttc agg aag ctc tgc tat cag gat gca cct gga ccc 435
 Tyr Arg Gln His Phe Arg Lys Leu Cys Tyr Gln Asp Ala Pro Gly Pro
 40 45 50 55
 cgt gaa gct ctt acc cag ctg tgg gag ctc tgc cgt cag tgg ctg agg 483
 Arg Glu Ala Leu Thr Gln Leu Trp Glu Leu Cys Arg Gln Trp Leu Arg
 60 65 70
 cca gaa tgc cac acc aag gag cag att tta gac ctg ctg gtg cta gaa 531
 Pro Glu Cys His Thr Lys Glu Gln Ile Leu Asp Leu Leu Val Leu Glu
 75 80 85

cag ttc ctg agc att ctt cct aaa gac ctg caa gca tgg gtg cgt gca Gln Phe Leu Ser Ile Leu Pro Lys Asp Leu Gln Ala Trp Val Arg Ala 90 95 100	579
cac cat cca gag act gga gag gag gca gtg acg gta ctg gag gat ctg His His Pro Glu Thr Gly Glu Glu Ala Val Thr Val Leu Glu Asp Leu 105 110 115	627
gag aga gag ctt gat gaa cct gga aag cag gtc cca ggc aat tca gaa Glu Arg Glu Leu Asp Glu Pro Gly Lys Gln Val Pro Gly Asn Ser Glu 120 125 130 135	675
aga cgg gac ata ctc atg gac aag ttg gcc ccc ttg gga agg cca tat Arg Arg Asp Ile Leu Met Asp Lys Leu Ala Pro Leu Gly Arg Pro Tyr 140 145 150	723
gaa tca ctg act gtc cag ctc cat ccc aaa aag acc cag ctg gag cag Glu Ser Leu Thr Val Gln Leu His Pro Lys Lys Thr Gln Leu Glu Gln 155 160 165	771
gaa gct ggg aaa cca caa agg aat ggt gat aaa act agg act aag aat Glu Ala Gly Lys Pro Gln Arg Asn Gly Asp Lys Thr Arg Thr Lys Asn 170 175 180	819
gaa gag ttg ttc cag aag gaa gat atg ccc aaa gac aag gaa ttc ctt Glu Glu Leu Phe Gln Lys Glu Asp Met Pro Lys Asp Lys Glu Phe Leu 185 190 195	867
ggg gag ata aat gac aga ctg aac aaa gat act cct cag cat cct aag Gly Glu Ile Asn Asp Arg Leu Asn Lys Asp Thr Pro Gln His Pro Lys 200 205 210 215	915
tcc aaa gat att att gaa aat gag ggc aga tca gaa tgg caa cag agg Ser Lys Asp Ile Ile Glu Asn Glu Gly Arg Ser Glu Trp Gln Gln Arg 220 225 230	963
gaa aga aga cga tat aaa tgt gat gaa tgt ggg aaa agt ttc agt cat Glu Arg Arg Arg Tyr Lys Cys Asp Glu Cys Gly Lys Ser Phe Ser His 235 240 245	1011
agc tca gac ctt agt aaa cac agg aga act cac acg gga gag aag ccc Ser Ser Asp Leu Ser Lys His Arg Arg Thr His Thr Gly Glu Lys Pro 250 255 260	1059
tat aaa tgt gat gag tgt gga aaa gcc ttc att cag cgc tca cat ctc Tyr Lys Cys Asp Glu Cys Gly Lys Ala Phe Ile Gln Arg Ser His Leu 265 270 275	1107
att gga cat cat aga gta cac acg gga gta aaa ccc tat aaa tgt aaa Ile Gly His His Arg Val His Thr Gly Val Lys Pro Tyr Lys Cys Lys 280 285 290 295	1155
gaa tgt ggg aaa gac ttc agt ggg cgc aca ggt ctt att cag cat cag Glu Cys Gly Lys Asp Phe Ser Gly Arg Thr Gly Leu Ile Gln His Gln 300 305 310	1203

aga atc cac aca ggt gaa aaa ccc tat gaa tgt gat gag tgt gga agg 1251
 Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Asp Glu Cys Gly Arg
 315 320 325

cct ttc cga gta agt tca gct ctt att aga cat caa aga att cat acc 1299
 Pro Phe Arg Val Ser Ser Ala Leu Ile Arg His Gln Arg Ile His Thr
 330 335 340

gca aat aaa ctc tac taa tatagc agtaatatca aaagttcttt ggacactcag 1353
 Ala Asn Lys Leu Tyr *
 345

gcctaactag ttatcaaaga atctatttta gaaaccttga gtttctctcaa tgtggtcaaa 1413

gcttcagtca tcattaaact tctctggacc aaaaaaaaaa 1451

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 aatgtcctgg ctgagattca gtcttttcgaa ctgcctattg aagctacttt aagtcaacag 180
 gaagagatac ctctttgggtc aggaatgtaa aaacaggaag gaggaagtct attgcaaadc 240
 tgtgctgggt gattatgaat tcaggtttca ccatggagga tggtcatta atg atc 295
 Met Ile
 1

atc agt gtg ctg tgc tgt tat tca aaa tta cag tct gtg tat gat gac 343
 Ile Ser Val Leu Cys Cys Tyr Ser Lys Leu Gln Ser Val Tyr Asp Asp
 5 10 15

caa cca aat gcg cac aag aag ttt atg gaa aag tta gat gct tgt atc 391
 Gln Pro Asn Ala His Lys Lys Phe Met Glu Lys Leu Asp Ala Cys Ile
 20 25 30

cgt aat cat gac aag gaa att gaa aag atg tgt aat ttt cat cat cag 439
 Arg Asn His Asp Lys Glu Ile Glu Lys Met Cys Asn Phe His His Gln
 35 40 45 50

ggt ttt gta gat gct att aca gaa ctc ctt aaa gta agg act gat gca 487
 Gly Phe Val Asp Ala Ile Thr Glu Leu Leu Lys Val Arg Thr Asp Ala
 55 60 65

gaa aaa ctg aag gtg caa gtt act gat acc aac cga agg ttt caa gat	535
Glu Lys Leu Lys Val Gln Val Thr Asp Thr Asn Arg Arg Phe Gln Asp	
70 75 80	
gct gga aaa gag gtg ata gtc cac aca gaa gat atc att cga tgt aga	583
Ala Gly Lys Glu Val Ile Val His Thr Glu Asp Ile Ile Arg Cys Arg	
85 90 95	
att cag cag aga aat att aca act gta gta gaa aaa ttg cag tta tgc	631
Ile Gln Gln Arg Asn Ile Thr Thr Val Val Glu Lys Leu Gln Leu Cys	
100 105 110	
ctt cct gtg cta gaa atg tac agt aag ctg aaa gaa cag atg agt gcc	679
Leu Pro Val Leu Glu Met Tyr Ser Lys Leu Lys Glu Gln Met Ser Ala	
115 120 125 130	
aaa agg tac tat tct gcc cta aaa act atg gaa caa tta gag aat gtg	727
Lys Arg Tyr Tyr Ser Ala Leu Lys Thr Met Glu Gln Leu Glu Asn Val	
135 140 145	
tac ttt ccc tgg gtt agt caa tac cgg ttt tgt cag ctc atg ata gaa	775
Tyr Phe Pro Trp Val Ser Gln Tyr Arg Phe Cys Gln Leu Met Ile Glu	
150 155 160	
aat ctt ccc aaa ctc cgt gag gat att aaa gaa atc tcc atg tct gat	823
Asn Leu Pro Lys Leu Arg Glu Asp Ile Lys Glu Ile Ser Met Ser Asp	
165 170 175	
ctc aaa gac ttt ttg gaa agt att cga aaa cat tct gac aaa ata ggt	871
Leu Lys Asp Phe Leu Glu Ser Ile Arg Lys His Ser Asp Lys Ile Gly	
180 185 190	
gaa aca gca atg aaa cag gca cag cat cag aaa acc ttc agt gtt tct	919
Glu Thr Ala Met Lys Gln Ala Gln His Gln Lys Thr Phe Ser Val Ser	
195 200 205 210	
ctg cag aaa caa aat aaa atg aaa ttt ggg aaa aat atg tat ata aat	967
Leu Gln Lys Gln Asn Lys Met Lys Phe Gly Lys Asn Met Tyr Ile Asn	
215 220 225	
cgt gat aga att cca gag gaa agg aat gaa act gta ttg aaa cat tca	1015
Arg Asp Arg Ile Pro Glu Glu Arg Asn Glu Thr Val Leu Lys His Ser	
230 235 240	
ctt gaa gaa gag gat gag aat gaa gaa gag atc tta act gtt cag gat	1063
Leu Glu Glu Glu Asp Glu Asn Glu Glu Glu Ile Leu Thr Val Gln Asp	
245 250 255	
ctt gtt gat ttt tcc cct gtt tat cga tgt ttg cac att tat tct gtt	1111
Leu Val Asp Phe Ser Pro Val Tyr Arg Cys Leu His Ile Tyr Ser Val	
260 265 270	
ttg ggt gac gag gaa aca ttt gaa aac tat tat cga aaa caa aga aag	1159
Leu Gly Asp Glu Glu Thr Phe Glu Asn Tyr Tyr Arg Lys Gln Arg Lys	
275 280 285 290	
aaa caa gca aga ctg gta ttg caa ccc cag tcg aat atg cat gaa aca	1207

Lys	Gln	Ala	Arg	Leu	Val	Leu	Gln	Pro	Gln	Ser	Asn	Met	His	Glu	Thr		
				295					300					305			
gtt	gat	ggc	tat	aga	aga	tat	ttc	act	caa	att	gta	ggg	ttc	ttt	gtg		1255
Val	Asp	Gly	Tyr	Arg	Arg	Tyr	Phe	Thr	Gln	Ile	Val	Gly	Phe	Phe	Val		
			310					315					320				
gta	gaa	gat	cac	att	tta	cat	gtg	acc	caa	gga	tta	gta	acc	agg	gca		1303
Val	Glu	Asp	His	Ile	Leu	His	Val	Thr	Gln	Gly	Leu	Val	Thr	Arg	Ala		
			325				330					335					
tac	act	gat	gaa	ctt	tgg	aac	atg	gcc	ctc	tca	aag	ata	att	gct	gtc		1351
Tyr	Thr	Asp	Glu	Leu	Trp	Asn	Met	Ala	Leu	Ser	Lys	Ile	Ile	Ala	Val		
	340					345					350						
ctt	aga	gct	cat	tca	tcc	tat	tgc	act	gat	cct	gat	ctt	gtt	ctg	gag		1399
Leu	Arg	Ala	His	Ser	Ser	Tyr	Cys	Thr	Asp	Pro	Asp	Leu	Val	Leu	Glu		
	355				360					365					370		
ctg	aag	aat	ctt	act	gta	ata	ttt	gca	gat	act	tta	cag	ggg	tat	ggg		1447
Leu	Lys	Asn	Leu	Thr	Val	Ile	Phe	Ala	Asp	Thr	Leu	Gln	Gly	Tyr	Gly		
				375					380					385			
ttt	cca	gtg	aac	cga	ctt	ttt	gac	ctt	tta	ttt	gaa	ata	aga	gac	caa		1495
Phe	Pro	Val	Asn	Arg	Leu	Phe	Asp	Leu	Leu	Phe	Glu	Ile	Arg	Asp	Gln		
			390					395					400				
tac	aat	gaa	aca	ctg	ctt	aag	aaa	tgg	gct	gga	gtt	ttc	agg	gac	att		1543
Tyr	Asn	Glu	Thr	Leu	Leu	Lys	Lys	Trp	Ala	Gly	Val	Phe	Arg	Asp	Ile		
		405					410					415					
ttt	gaa	gaa	gat	aat	tac	agc	ccc	atc	cct	gtt	gtc	aat	gaa	gaa	gaa		1591
Phe	Glu	Glu	Asp	Asn	Tyr	Ser	Pro	Ile	Pro	Val	Val	Asn	Glu	Glu	Glu		
	420					425					430						
tat	aaa	att	gtc	atc	agc	aaa	ttt	ccc	ttt	caa	gat	cca	gac	ctt	gaa		1639
Tyr	Lys	Ile	Val	Ile	Ser	Lys	Phe	Pro	Phe	Gln	Asp	Pro	Asp	Leu	Glu		
	435				440					445					450		
aag	cag	tct	ttc	cca	aag	aaa	ttc	ccc	atg	tct	cag	tca	gtg	cct	cat		1687
Lys	Gln	Ser	Phe	Pro	Lys	Lys	Phe	Pro	Met	Ser	Gln	Ser	Val	Pro	His		
				455				460						465			
att	tac	att	caa	gtt	aaa	gaa	ttt	att	tat	gcc	agc	ctt	aaa	ttt	tca		1735
Ile	Tyr	Ile	Gln	Val	Lys	Glu	Phe	Ile	Tyr	Ala	Ser	Leu	Lys	Phe	Ser		
			470					475					480				
gag	tca	cta	cac	cgg	agc	tca	aca	gaa	ata	gac	gat	atg	ctt	aga	aaa		1783
Glu	Ser	Leu	His	Arg	Ser	Ser	Thr	Glu	Ile	Asp	Asp	Met	Leu	Arg	Lys		
			485				490					495					
tca	aca	aat	ctg	ctg	ctg	acc	aga	act	ttg	agt	agc	tgt	tta	ctg	aac		1831
Ser	Thr	Asn	Leu	Leu	Leu	Thr	Arg	Thr	Leu	Ser	Ser	Cys	Leu	Leu	Asn		
	500					505					510						
ctt	att	aga	aaa	cct	cat	ata	ggg	ttg	aca	gag	ctg	gta	caa	atc	atc		1879
Leu	Ile	Arg	Lys	Pro	His	Ile	Gly	Leu	Thr	Glu	Leu	Val	Gln	Ile	Ile		

515	520	525	530	
ata aac aca aca cac ctg gag caa gct tgt aaa tat ctt gag gac ttt				1927
Ile Asn Thr Thr His Leu Glu Gln Ala Cys Lys Tyr Leu Glu Asp Phe	535	540	545	
ata act aac att aca aat att tcc caa gaa act gtt cat act aca aga				1975
Ile Thr Asn Ile Thr Asn Ile Ser Gln Glu Thr Val His Thr Thr Arg	550	555	560	
ctt tat gga ctt tct act ttc aag gat gct cga cat gca gca gaa gga				2023
Leu Tyr Gly Leu Ser Thr Phe Lys Asp Ala Arg His Ala Ala Glu Gly	565	570	575	
gaa ata tat acc aaa ctg aat caa aaa att gat gaa ttt gtt cag ctt				2071
Glu Ile Tyr Thr Lys Leu Asn Gln Lys Ile Asp Glu Phe Val Gln Leu	580	585	590	
gct gat tat gac tgg aca atg tct gag cca gat gga aga gct agt ggt				2119
Ala Asp Tyr Asp Trp Thr Met Ser Glu Pro Asp Gly Arg Ala Ser Gly	595	600	605	610
tat tta atg gac ctt ata aat ttt ttg aga agc atc ttt caa gtg ttt				2167
Tyr Leu Met Asp Leu Ile Asn Phe Leu Arg Ser Ile Phe Gln Val Phe	615	620	625	
act cat ttg cct ggg aaa gtt gct cag aca gct tgc atg tca gcc tgc				2215
Thr His Leu Pro Gly Lys Val Ala Gln Thr Ala Cys Met Ser Ala Cys	630	635	640	
cag cat ctg tca aca tcc tta atg cag atg cta ctg gac agt gag tta				2263
Gln His Leu Ser Thr Ser Leu Met Gln Met Leu Leu Asp Ser Glu Leu	645	650	655	
aaa caa ata agc atg gga gct gtt cag cag ttt aac tta gat gtc ata				2311
Lys Gln Ile Ser Met Gly Ala Val Gln Gln Phe Asn Leu Asp Val Ile	660	665	670	
cag tgt gaa ttg ttt gcc agc tct gag cct gtg cca gga ttc cag ggg				2359
Gln Cys Glu Leu Phe Ala Ser Ser Glu Pro Val Pro Gly Phe Gln Gly	675	680	685	690
gat acc ctg cag cta gca ttc att gac ctc aga caa ctc ctt gac ctg				2407
Asp Thr Leu Gln Leu Ala Phe Ile Asp Leu Arg Gln Leu Leu Asp Leu	695	700	705	
ttt atg gtt tgg gat tgg tct act tac cta gct gat tat ggg cag cca				2455
Phe Met Val Trp Asp Trp Ser Thr Tyr Leu Ala Asp Tyr Gly Gln Pro	710	715	720	
gct tct aag tac ctt cgg gtg aat cca aac aca gcc ctt act ctt ttg				2503
Ala Ser Lys Tyr Leu Arg Val Asn Pro Asn Thr Ala Leu Thr Leu Leu	725	730	735	
gag aag atg aag gat act agc aaa aag aac aat ata ttt gct cag ttc				2551
Glu Lys Met Lys Asp Thr Ser Lys Lys Asn Asn Ile Phe Ala Gln Phe	740	745	750	

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<400> 49

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1 5

aag aag gaa gct cct gcc cct cct aaa gcc gaa gcc aaa gcg aag gct 103
Lys Lys Glu Ala Pro Ala Pro Pro Lys Ala Glu Ala Lys Ala Lys Ala
10 15 20

ttg caa ggc caa gaa ggc agt gtt gaa aga tgt cca cag cca caa aaa 151
Leu Gln Gly Gln Glu Gly Ser Val Glu Arg Cys Pro Gln Pro Gln Lys
25 30 35

aaa caa gat cca cat gtc acc cac ctt ccg gcg gcc caa gac act gtg 199
Lys Gln Asp Pro His Val Thr His Leu Pro Ala Ala Gln Asp Thr Val
40 45 50

act ccg gag gca gcc caa ata tcc ttg gaa gag cac ccc cag gag aaa 247
Thr Pro Glu Ala Ala Gln Ile Ser Leu Glu Glu His Pro Gln Glu Lys
55 60 65

taa gctt gaccaccatg ttatcatcaa gtttccgctg accactgagt aggctgtgaa 304
*
70

gaagatagaa aacaacagcc tacttgtgtt cactgtggat gttaaagcca acaagcacca 364

gatcaaacag gctgtgaaga agtttgtgac attgatgtgg ccaaagtcaa cactctgatt 424

cagtctgatg gagagaggaa ggcatatgtt cgactggctc ctgactacga tgctttgggt 484

gttgccacca aaattgggat cacctaaact gagtcaagct ggctaattcc aaatatatgt 544

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<211> 3011

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cggccccgga gccctcggc ggcgccacc atg tac tcg gga gcc ggc ccc gca 173
Met Tyr Ser Gly Ala Gly Pro Ala
1 5

ctt gca cct cct gcg ccg ccg ccc ccc atc caa gga tat gcc ttc aag	221
Leu Ala Pro Pro Ala Pro Pro Pro Pro Ile Gln Gly Tyr Ala Phe Lys	
10 15 20	
cct cca cct aga ccc gac ttt ggg acc tcc ggg aga aca atc aaa tta	269
Pro Pro Pro Arg Pro Asp Phe Gly Thr Ser Gly Arg Thr Ile Lys Leu	
25 30 35 40	
cag gcc aat ttc ttc gaa atg gac atc ccc aaa att gac atc tat cat	317
Gln Ala Asn Phe Phe Glu Met Asp Ile Pro Lys Ile Asp Ile Tyr His	
45 50 55	
tat gaa ttg gat atc aag cca gag aag tgc ccg agg aga gtt aac agg	365
Tyr Glu Leu Asp Ile Lys Pro Glu Lys Cys Pro Arg Arg Val Asn Arg	
60 65 70	
gaa atc gtg gaa cac atg gtc cag cac ttt aaa aca cag atc ttt ggg	413
Glu Ile Val Glu His Met Val Gln His Phe Lys Thr Gln Ile Phe Gly	
75 80 85	
gat cgg aag ccc gtg ttt gac ggc agg aag aat cta tac aca gcc atg	461
Asp Arg Lys Pro Val Phe Asp Gly Arg Lys Asn Leu Tyr Thr Ala Met	
90 95 100	
ccc ctt ccg att ggg agg gac aag gtg gag ctg gag gtc acg ctg cca	509
Pro Leu Pro Ile Gly Arg Asp Lys Val Glu Leu Glu Val Thr Leu Pro	
105 110 115 120	
gga gaa ggc aag gat cgc atc ttc aag gtg tcc atc aag tgg gtg tcc	557
Gly Glu Gly Lys Asp Arg Ile Phe Lys Val Ser Ile Lys Trp Val Ser	
125 130 135	
tgc gtg agc ttg cag gcg tta cac gat gca ctt tca ggg ccg ctg ccc	605
Cys Val Ser Leu Gln Ala Leu His Asp Ala Leu Ser Gly Arg Leu Pro	
140 145 150	
agc gtc cct ttt gag acg atc cag gcc ctg gac gtg gtc atg agg cac	653
Ser Val Pro Phe Glu Thr Ile Gln Ala Leu Asp Val Val Met Arg His	
155 160 165	
ttg cca tcc atg agg tac acc ccc gtg ggc cgc tcc ttc ttc acc gcg	701
Leu Pro Ser Met Arg Tyr Thr Pro Val Gly Arg Ser Phe Phe Thr Ala	
170 175 180	
tcc gaa ggc tgc tct aac cct ctt ggc ggg ggc cga gaa gtg tgg ttt	749
Ser Glu Gly Cys Ser Asn Pro Leu Gly Gly Gly Arg Glu Val Trp Phe	
185 190 195 200	
ggc ttc cat cag tcc gtc ccg cct tct ctc tgg aaa atg atg ctg aat	797
Gly Phe His Gln Ser Val Arg Pro Ser Leu Trp Lys Met Met Leu Asn	
205 210 215	
att gat gtg tca gca aca gcg ttt tac aag gca cag cca gta atc gag	845
Ile Asp Val Ser Ala Thr Ala Phe Tyr Lys Ala Gln Pro Val Ile Glu	
220 225 230	

Ala	Pro	Gln	Arg	Gln	Cys	Thr	Glu	Val	His	Leu	Lys	Ser	Phe	Thr	Glu		
			460					465					470				
cag	ctc	aga	aag	atc	tcg	aga	gac	gcc	ggc	atg	ccc	atc	cag	ggc	cag	1613	
Gln	Leu	Arg	Lys	Ile	Ser	Arg	Asp	Ala	Gly	Met	Pro	Ile	Gln	Gly	Gln		
			475				480					485					
ccg	tgc	ttc	tgc	aaa	tac	gcg	cag	ggg	gcg	gac	agc	gtg	gag	ccc	atg	1661	
Pro	Cys	Phe	Cys	Lys	Tyr	Ala	Gln	Gly	Ala	Asp	Ser	Val	Glu	Pro	Met		
			490				495				500						
ttc	cgg	cac	ctg	aag	aac	acg	tat	gcg	ggc	ctg	cag	ctg	gtg	gtg	gtc	1709	
Phe	Arg	His	Leu	Lys	Asn	Thr	Tyr	Ala	Gly	Leu	Gln	Leu	Val	Val	Val		
505					510					515					520		
atc	ctg	ccc	ggc	aag	acg	ccc	gtg	tac	gcc	gag	gtc	aag	cgc	gtg	gga	1757	
Ile	Leu	Pro	Gly	Lys	Thr	Pro	Val	Tyr	Ala	Glu	Val	Lys	Arg	Val	Gly		
				525					530					535			
gac	acg	gtg	ctg	ggg	atg	gcc	acg	cag	tgc	gtg	cag	atg	aag	aac	gtg	1805	
Asp	Thr	Val	Leu	Gly	Met	Ala	Thr	Gln	Cys	Val	Gln	Met	Lys	Asn	Val		
			540					545					550				
cag	agg	acc	acg	cca	cag	acc	ctg	tcc	aac	ctc	tgc	ctg	aag	atc	aac	1853	
Gln	Arg	Thr	Thr	Pro	Gln	Thr	Leu	Ser	Asn	Leu	Cys	Leu	Lys	Ile	Asn		
			555				560						565				
gtc	aag	ctg	gga	ggc	gtg	aac	aac	atc	ctg	ctg	ccc	cag	ggc	agg	ccg	1901	
Val	Lys	Leu	Gly	Gly	Val	Asn	Asn	Ile	Leu	Leu	Pro	Gln	Gly	Arg	Pro		
			570			575					580						
ccg	gtg	ttc	cag	cag	ccc	gtc	atc	ttt	ctg	gga	gca	gac	gtc	act	cac	1949	
Pro	Val	Phe	Gln	Gln	Pro	Val	Ile	Phe	Leu	Gly	Ala	Asp	Val	Thr	His		
585					590					595					600		
ccc	ccc	gcc	ggg	gat	ggg	aag	aag	ccc	tcc	att	gcc	gcc	gtg	gtg	ggc	1997	
Pro	Pro	Ala	Gly	Asp	Gly	Lys	Lys	Pro	Ser	Ile	Ala	Ala	Val	Val	Gly		
				605					610					615			
agc	atg	gac	gcc	cac	ccc	aat	cgc	tac	tgc	gcc	acc	gtg	cgt	gtg	cag	2045	
Ser	Met	Asp	Ala	His	Pro	Asn	Arg	Tyr	Cys	Ala	Thr	Val	Arg	Val	Gln		
			620					625					630				
cag	cac	cgg	cag	gag	atc	ata	caa	gac	ctg	gcc	gcc	atg	gtc	cgc	gag	2093	
Gln	His	Arg	Gln	Glu	Ile	Ile	Gln	Asp	Leu	Ala	Ala	Met	Val	Arg	Glu		
			635				640						645				
ctc	ctc	atc	cag	ttc	tac	aag	tcc	acg	cgc	ttc	aag	ccc	acc	cgc	atc	2141	
Leu	Leu	Ile	Gln	Phe	Tyr	Lys	Ser	Thr	Arg	Phe	Lys	Pro	Thr	Arg	Ile		
			650			655					660						
atc	ttc	tac	cgc	gac	ggt	gtc	tct	gaa	ggc	cag	ttc	cag	cag	gtt	ctc	2189	
Ile	Phe	Tyr	Arg	Asp	Gly	Val	Ser	Glu	Gly	Gln	Phe	Gln	Gln	Val	Leu		
665					670					675					680		
cac	cac	gag	ttg	ctg	gcc	atc	cgt	gag	gcc	tgt	atc	aag	cta	gaa	aaa	2237	
His	His	Glu	Leu	Leu	Ala	Ile	Arg	Glu	Ala	Cys	Ile	Lys	Leu	Glu	Lys		

685	690	695	
gac tac cag ccc ggg atc acc ttc atc gtg gtg cag aag agg cac cac Asp Tyr Gln Pro Gly Ile Thr Phe Ile Val Val Gln Lys Arg His His 700 705 710			2285
acc cgg ctc ttc tgc act gac aag aac gag cgg gtt ggg aaa agt gga Thr Arg Leu Phe Cys Thr Asp Lys Asn Glu Arg Val Gly Lys Ser Gly 715 720 725			2333
aac att cca gca ggc acg act gtg gac acg aaa atc acc cac ccc acc Asn Ile Pro Ala Gly Thr Thr Val Asp Thr Lys Ile Thr His Pro Thr 730 735 740			2381
gag ttc gac ttc tac ctg tgt agt cac gct ggc atc cag ggg aca agc Glu Phe Asp Phe Tyr Leu Cys Ser His Ala Gly Ile Gln Gly Thr Ser 745 750 755 760			2429
agg cct tcg cac tat cac gtc ctc tgg gac gac aat cgt ttc tcc tct Arg Pro Ser His Tyr His Val Leu Trp Asp Asp Asn Arg Phe Ser Ser 765 770 775			2477
gat gag ctg cag atc cta acc tac cag ctg tgt cac acc tac gtg cgc Asp Glu Leu Gln Ile Leu Thr Tyr Gln Leu Cys His Thr Tyr Val Arg 780 785 790			2525
tgc aca cgc tcc gtg tcc atc cca gcg cca gca tac tac gct cac ctg Cys Thr Arg Ser Val Ser Ile Pro Ala Pro Ala Tyr Tyr Ala His Leu 795 800 805			2573
gtg gcc ttc cgg gcc agg tac cac ctg gtg gat aag gaa cat gac agt Val Ala Phe Arg Ala Arg Tyr His Leu Val Asp Lys Glu His Asp Ser 810 815 820			2621
gct gaa gga agc cat acc tct ggg cag agt aac ggg cga gac cac caa Ala Glu Gly Ser His Thr Ser Gly Gln Ser Asn Gly Arg Asp His Gln 825 830 835 840			2669
gca ctg gcc aag gcg gtc cag gtt cac caa gac act ctg cgc acc atg Ala Leu Ala Lys Ala Val Gln Val His Gln Asp Thr Leu Arg Thr Met 845 850 855			2717
tac ttt gct tga cat gttttagtgt ttagcgattg tgtaccgagt gggattcacg Tyr Phe Ala * 860			2772
agaccagcta cactcagacc aacagatggc cagcccttcc gtgacagcca gcatcgaaca			2832
tgagacgtca ttgattttat tagattctcc gttttccaga atgccttccg tcccagattt			2892
caaacttggga ttttgaactg cagacctgta tgagaaccca atgtcatagg aaatatggtt			2952
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 <222> (639) .. (935)

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ctttcaatgt catcttttga ggtcaagtta tcagaaatgg ggatgaatct ctgccgtacc      180
tgctctttca cctccacct gatcactact ctcgacaaa gtcaattgca gagcagaagg      240
tgctggagggc gaatgctaca cccctggaca gaggcgacgg tgtcttaaga acctgcgctc      300
tgaggccagc tggcatctat gggcctggag aacaaagaca ccttcccagg atagtcagct      360
acatcgagaa gggctctgtt aagtttgtct acggcgaccc caggagcctg gttgagtttg      420
tccacgtgga taacttggtg caggctcaca ttctggcctc agaagccctg agagctgaca      480
agggccatat tgctctggg cagccctact tcattctcaga tggcagaccc gtgaacaact      540
ttgagttctt ccggcctctg gttgagggcc tgggctacac attcccgtct accgcctgc      600
cattgacctt ggtctactgc tttgcttttc taacagag      atg gtt cac ttc att      653
                                   Met Val His Phe Ile
                                   1                               5

ttg ggt cga ctc tac aac ttc cag ccc ttc ctc act cgc act gaa gtt      701
Leu Gly Arg Leu Tyr Asn Phe Gln Pro Phe Leu Thr Arg Thr Glu Val
                                   10                               15                               20

tac aaa act ggt gtc aca cat tat ttt agc tta gag aaa gcc aag aaa      749
Tyr Lys Thr Gly Val Thr His Tyr Phe Ser Leu Glu Lys Ala Lys Lys
                                   25                               30                               35

gag cta ggt tat aag gct cag cca ttt gac ctc cag gaa gca gtg gaa      797
Glu Leu Gly Tyr Lys Ala Gln Pro Phe Asp Leu Gln Glu Ala Val Glu
                                   40                               45                               50

tgg ttt aaa gcc cat ggt cat ggc aga agt tct gga agt cgt gac tcg      845
Trp Phe Lys Ala His Gly His Gly Arg Ser Ser Gly Ser Arg Asp Ser
                                   55                               60                               65

gag tgt ttt gtt tgg gat ggg cta ttg gtc ttc ctc ctg att ata gca      893
Glu Cys Phe Val Trp Asp Gly Leu Leu Val Phe Leu Leu Ile Ile Ala
                                   70                               75                               80                               85

gtt ctc atg tgg ctg cct tct tct gtg att ctg tca ctg tga aggaggg      942
Val Leu Met Trp Leu Pro Ser Ser Val Ile Leu Ser Leu *
                                   90                               95

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gccagaaata aggtgatcac agttggctga gatgggttctc aagaaacatg ggtttttaaaa 1002
tgtgtacagt gatattctggg gccaaacatt ggctcttcaa attgctactt aaaaaaaaaa 1062
aa 1064

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<213> Homo sapiens

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<222> (158)..(682)

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cacctccgga taaatcacgg ggtctcccgc gccgctc atg gcg cct ccc gtc cgt 175
                                Met Ala Pro Pro Val Arg
                                1 5
ctc gag cgt ccc ttt cct tcc cgg cgc ttt cct ggg ttg ctt ctg gcg 223
Leu Glu Arg Pro Phe Pro Ser Arg Arg Phe Pro Gly Leu Leu Leu Ala
                                10 15 20
gcc ctg gtg ttg ctg ctg tcc tcc ttc tcc gat caa tgc aat gtc ccg 271
Ala Leu Val Leu Leu Leu Ser Ser Phe Ser Asp Gln Cys Asn Val Pro
                                25 30 35
gaa tgg ctt cca ttt gcc agg cct acc aac cta act gat gac ttt gag 319
Glu Trp Leu Pro Phe Ala Arg Pro Thr Asn Leu Thr Asp Asp Phe Glu
                                40 45 50
ttt ccc att ggg aca tat ctg aac tat gaa tgc cgc cct ggt tat tcc 367
Phe Pro Ile Gly Thr Tyr Leu Asn Tyr Glu Cys Arg Pro Gly Tyr Ser
                                55 60 65 70
gga aga ccg ttt tct atc atc tgc cta aaa aac tca gtc tgg aca agt 415
Gly Arg Pro Phe Ser Ile Ile Cys Leu Lys Asn Ser Val Trp Thr Ser
                                75 80 85
gct aag gac aag tgc aaa cgt aaa tca tgt cgt aat cct cca gat cct 463
Ala Lys Asp Lys Cys Lys Arg Lys Ser Cys Arg Asn Pro Pro Asp Pro
                                90 95 100
gtg aat ggc atg gca cat gtg atc aaa gac atc cag ttc gga tcc caa 511
Val Asn Gly Met Ala His Val Ile Lys Asp Ile Gln Phe Gly Ser Gln
                                105 110 115
att aaa tat tct tgt cct aaa gga tac cga ctc att ggt tcc tcg tct 559

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Ile	Lys	Tyr	Ser	Cys	Pro	Lys	Gly	Tyr	Arg	Leu	Ile	Gly	Ser	Ser	Ser		
120						125					130						
gcc	aca	tgc	atc	atc	tca	ggc	aac	act	gtc	att	tgg	gat	aat	aaa	aca	607	
Ala	Thr	Cys	Ile	Ile	Ser	Gly	Asn	Thr	Val	Ile	Trp	Asp	Asn	Lys	Thr		
135					140					145					150		
cct	gtt	tgt	gac	agt	gag	ttg	aaa	tat	gca	ttc	cta	ttt	ctt	tta	ccg	655	
Pro	Val	Cys	Asp	Ser	Glu	Leu	Lys	Tyr	Ala	Phe	Leu	Phe	Leu	Leu	Pro		
				155					160						165		
ata	cat	tct	aat	ttt	tct	ctg	gaa	taa	taaaa	atctattccg	aaaaaaaaaa					707	
Ile	His	Ser	Asn	Phe	Ser	Leu	Glu	*									
			170					175									
aaa																710	

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agtcagtgg	ggccgaaagt	ccggagtcgc	tgtaaaacct	gagattgtga	gcc	atg										176	
						Met											
						1											
gtg	ggg	aga	tcc	cgg	cgg	cgc	gga	gca	gct	aag	tgg	gca	gct	gtg	cga	224	
Val	Gly	Arg	Ser	Arg	Arg	Arg	Gly	Ala	Ala	Lys	Trp	Ala	Ala	Val	Arg		
			5				10							15			
gcc	aag	gca	ggt	ccc	acg	ctc	acc	gac	gaa	aat	gga	gat	gat	tta	gga	272	
Ala	Lys	Ala	Gly	Pro	Thr	Leu	Thr	Asp	Glu	Asn	Gly	Asp	Asp	Leu	Gly		
			20				25							30			
ttg	cca	ccc	tca	cca	ggg	gac	acc	agc	tac	tac	caa	gat	cag	gta	gat	320	
Leu	Pro	Pro	Ser	Pro	Gly	Asp	Thr	Ser	Tyr	Tyr	Gln	Asp	Gln	Val	Asp		
			35				40							45			
gac	ttt	cat	gag	gca	cga	tcc	cgg	gcc	gcc	tta	gct	aag	ggc	tgg	aat	368	
Asp	Phe	His	Glu	Ala	Arg	Ser	Arg	Ala	Ala	Leu	Ala	Lys	Gly	Trp	Asn		
			50			55				60					65		
gaa	gta	cag	agt	gga	gac	gag	gag	gat	ggc	gag	gag	gag	gag	gag	gag	416	
Glu	Val	Gln	Ser	Gly	Asp	Glu	Glu	Asp	Gly	Glu	Glu	Glu	Glu	Glu	Glu		
				70					75						80		

gtg cta gcc cta gat atg gac gat gag gac gac gaa gat gga ggg aat	464
Val Leu Ala Leu Asp Met Asp Asp Glu Asp Asp Glu Asp Gly Gly Asn	
85 90 95	
gcg ggg gag gag gag gag gag gag aat gcc gat gat gat ggt ggg agc	512
Ala Gly Glu Glu Glu Glu Glu Glu Asn Ala Asp Asp Asp Gly Gly Ser	
100 105 110	
tcc gtg caa agt gaa gct gag gcc tct gtg gat ccc agt ttg tcg tgg	560
Ser Val Gln Ser Glu Ala Glu Ala Ser Val Asp Pro Ser Leu Ser Trp	
115 120 125	
ggt cag agg aaa aaa ctt tac tat gac acg gac tat ggt tcc aag tcc	608
Gly Gln Arg Lys Lys Leu Tyr Tyr Asp Thr Asp Tyr Gly Ser Lys Ser	
130 135 140 145	
cga ggc cgg cag agt caa cag gag gca gag gag gag gaa aga gag gag	656
Arg Gly Arg Gln Ser Gln Gln Glu Ala Glu Glu Glu Glu Arg Glu Glu	
150 155 160	
gag gag gag gca cag atc att cag cgg cgc cta gcc caa gcg ctg caa	704
Glu Glu Glu Ala Gln Ile Ile Gln Arg Arg Leu Ala Gln Ala Leu Gln	
165 170 175	
gag gat gat ttt ggt gtc gcc tgg gtt gag gcc ttt gca aaa cca gtg	752
Glu Asp Asp Phe Gly Val Ala Trp Val Glu Ala Phe Ala Lys Pro Val	
180 185 190	
cct cag gta gat gag gct gag aca cgg gtc gtg aag gat ttg gct aaa	800
Pro Gln Val Asp Glu Ala Glu Thr Arg Val Val Lys Asp Leu Ala Lys	
195 200 205	
gtt tca gtg aaa gag aag ctg aaa atg ttg cga aag gaa tca cca gaa	848
Val Ser Val Lys Glu Lys Leu Lys Met Leu Arg Lys Glu Ser Pro Glu	
210 215 220 225	
ctc ttg gag ctg ata gaa gac ctg aaa gtc aag ttg aca gag gtt aag	896
Leu Leu Glu Leu Ile Glu Asp Leu Lys Val Lys Leu Thr Glu Val Lys	
230 235 240	
gat gag ctg gag cca ttg tta gag ttg gtg gaa caa ggg atc att cca	944
Asp Glu Leu Glu Pro Leu Leu Glu Leu Val Glu Gln Gly Ile Ile Pro	
245 250 255	
ccc gga aaa gga agc caa tac ttg agg acc aag tac aac ctc tac ttg	992
Pro Gly Lys Gly Ser Gln Tyr Leu Arg Thr Lys Tyr Asn Leu Tyr Leu	
260 265 270	
aat tat tgc tcg aac atc agt ttt tat ttg atc ctg aaa gct agg aga	1040
Asn Tyr Cys Ser Asn Ile Ser Phe Tyr Leu Ile Leu Lys Ala Arg Arg	
275 280 285	
gtc cca gca cat gga cat cct gtc ata gaa agg ctt gtt acc tac cga	1088
Val Pro Ala His Gly His Pro Val Ile Glu Arg Leu Val Thr Tyr Arg	
290 295 300 305	

aat ttg atc aac aag ctg tcc gtt gtg gat cag aag ctg tcc tca gaa	1136
Asn Leu Ile Asn Lys Leu Ser Val Val Asp Gln Lys Leu Ser Ser Glu	
310 315 320	
att cgt cat ctg ttg aca ctt aag gat gat gct gta aag aaa gaa ctg	1184
Ile Arg His Leu Leu Thr Leu Lys Asp Asp Ala Val Lys Lys Glu Leu	
325 330 335	
att cca aaa gca aaa tcc acc aag ccc aaa cca aag tct gtt tca aag	1232
Ile Pro Lys Ala Lys Ser Thr Lys Pro Lys Pro Lys Ser Val Ser Lys	
340 345 350	
act tct gct gct gcc tgt gct gtt aca gat ctt tct gat gat tct gat	1280
Thr Ser Ala Ala Ala Cys Ala Val Thr Asp Leu Ser Asp Asp Ser Asp	
355 360 365	
ttt gat gaa aaa gca aaa ctg aag tac tat aaa gaa ata gaa gac agg	1328
Phe Asp Glu Lys Ala Lys Leu Lys Tyr Tyr Lys Glu Ile Glu Asp Arg	
370 375 380 385	
caa aag cta aag aga aag aaa gaa gaa aat agc act gaa gaa cag gct	1376
Gln Lys Leu Lys Arg Lys Lys Glu Glu Asn Ser Thr Glu Glu Gln Ala	
390 395 400	
ctt gaa gat caa aat gca aag aga gct att acc tat caa att gct aaa	1424
Leu Glu Asp Gln Asn Ala Lys Arg Ala Ile Thr Tyr Gln Ile Ala Lys	
405 410 415	
aat agg gga ctt act cct agg aga aag aag att gat cgc aat ccc aga	1472
Asn Arg Gly Leu Thr Pro Arg Arg Lys Lys Ile Asp Arg Asn Pro Arg	
420 425 430	
gtg aaa cac aga gag aag ttc aga aga gcc aaa att aga aga aga ggc	1520
Val Lys His Arg Glu Lys Phe Arg Arg Ala Lys Ile Arg Arg Arg Gly	
435 440 445	
cag gtt cgt gaa gtt cgt aaa gaa gag caa cgt tat agt ggt gaa tta	1568
Gln Val Arg Glu Val Arg Lys Glu Glu Gln Arg Tyr Ser Gly Glu Leu	
450 455 460 465	
tct ggc att cgt gca gga gtt aaa aag agc att aag ctt aaa tga agt	1616
Ser Gly Ile Arg Ala Gly Val Lys Lys Ser Ile Lys Leu Lys *	
470 475 480	
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aaaaaaaaa	1685

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<221> CDS
 <222> (289) .. (831)

<400> 54

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aaggaagaaa attggtaact ttaagtggga cttatcattt gttgtgtgtg ctttcctcat	180
agtgagtcta attttcacaa ttacaccttg gtctcattga atgaagaatt taatcgtgga	240
cgaggactaa atgtgggtgc ccgagcttgg gacaagggag aggtcttg atg ttt ttc	297
Met Phe Phe	
1	
tgt gat gtt gat atc tat ttc tca gcc gaa ttc ctt aac agc tgc cgg	345
Cys Asp Val Asp Ile Tyr Phe Ser Ala Glu Phe Leu Asn Ser Cys Arg	
5 10 15	
tta aat gct gag cca ggt aag aag gtg ttt tac cct gtg gtg ttc agt	393
Leu Asn Ala Glu Pro Gly Lys Lys Val Phe Tyr Pro Val Val Phe Ser	
20 25 30 35	
ctt tac aat cct gcc att gtt tat gcc aac cag gaa gtg cca cca cct	441
Leu Tyr Asn Pro Ala Ile Val Tyr Ala Asn Gln Glu Val Pro Pro Pro	
40 45 50	
gtg gag cag cag ctg gtt cac aaa aag gat tct ggc ttt tgg cga gat	489
Val Glu Gln Gln Leu Val His Lys Lys Asp Ser Gly Phe Trp Arg Asp	
55 60 65	
ttt ggc ttt gga atg act tgt cag tat cgt tca gat ttc ctg acc att	537
Phe Gly Phe Gly Met Thr Cys Gln Tyr Arg Ser Asp Phe Leu Thr Ile	
70 75 80	
ggg gga ttt gac atg gaa gtg aaa ggt tgg ggt gga gaa gat gtt cat	585
Gly Gly Phe Asp Met Glu Val Lys Gly Trp Gly Gly Glu Asp Val His	
85 90 95	
ctt tat cga aaa tac tta cat ggt gac ctc att gtg att cgg act ccg	633
Leu Tyr Arg Lys Tyr Leu His Gly Asp Leu Ile Val Ile Arg Thr Pro	
100 105 110 115	
gtt cct ggt ctt ttc cac ctc tgg cat gaa aag cgc tgt gct gat gag	681
Val Pro Gly Leu Phe His Leu Trp His Glu Lys Arg Cys Ala Asp Glu	
120 125 130	
ctg acc ccc gag cag tac cgc atg tgc atc cag tct aaa gcc atg aat	729
Leu Thr Pro Glu Gln Tyr Arg Met Cys Ile Gln Ser Lys Ala Met Asn	
135 140 145	
gag gcc tct cac tcc cac ctg gga atg ctg gtc ttc agg gag gaa ata	777
Glu Ala Ser His Ser His Leu Gly Met Leu Val Phe Arg Glu Glu Ile	
150 155 160	
gag acg cat ctt cat aaa cag gca tac agg aca aac agt gaa gct gtt	825

Glu	Thr	His	Leu	His	Lys	Gln	Ala	Tyr	Arg	Thr	Asn	Ser	Glu	Ala	Val	
165						170					175					
ggt tga aatcataatt aatgcgttac tgtatgaacc acaaaacagc actatatttatt																881
Gly *																
180																
tagccttact tctacttcca gatgcagtgc ctctttttgga gaagacatgt ttattttttca																941
tgttcttttct gacattactt tagcaattca acttgatgtg agaagaaaaa acaaatgttt																1001
caacacaaaa tctctgtttt gtgagaatac tgcactatgg aataattgac aaattgaaat																1061
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tgtgtgggat tgcattggtg cctgattgca tctagggtgga gcggatggaa tgtgctgggc																1181
cactgtttggg tggagagcag cacattctta cagaggagat ggagcgttat gagcatagta																1241
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agaatccttt tccactgaaa tagaggataa ttaattgaca catctgaaat ccccaatcaa																1361
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Asp Thr Arg Gln Ala Ser Asn Arg Trp Glu Lys Arg Ala Met Glu Lys	
175 180 185	
gaa aac aaa aag att cgg gac aaa gca agg aaa gag aag aat gag ctt	628
Glu Asn Lys Lys Ile Arg Asp Lys Ala Arg Lys Glu Lys Asn Glu Leu	
190 195 200	
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Val Arg Gln Leu Val Ala Phe Ile Arg Lys Arg Asp Lys Arg Val Gln	
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His Arg Met Tyr Leu Ala Lys Ile His Ile Cys Leu Gln Leu Thr Phe	
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aacacttgac actcacatga gaacaagact cctgctgcgt ccctggagtg tcactaagca	1881
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gcc ctg aaa tgg cac ccg gat aaa aat ctg gat aat gcc gca gaa gca											148
Ala Leu Lys Trp His Pro Asp Lys Asn Leu Asp Asn Ala Ala Glu Ala											
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gct gaa caa ttt aaa tta atc caa gca gca tat gat gtg ttg agt gac											196
Ala Glu Gln Phe Lys Leu Ile Gln Ala Ala Tyr Asp Val Leu Ser Asp											
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cct cag gaa aga gca tgg tat gat aat cat aga gag gcc cta ctt aaa											244
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Tyr Phe Thr Val Thr Cys Tyr Ser Gly Tyr Gly Asp Asp Glu Lys Gly											
				95						100	105
ttt tac acg gtg tat cgt aat gtt ttt gaa atg att gcc aag gaa gaa											388
Phe Tyr Thr Val Tyr Arg Asn Val Phe Glu Met Ile Ala Lys Glu Glu											
				110						115	120
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Leu Glu Ser Val Leu Glu Glu Glu Val Asp Asp Phe Pro Thr Phe Gly											
				125						130	135
gac tcc cag agt gac tat gat acg gta gtc cat cct ttc tac gct tat											484
Asp Ser Gln Ser Asp Tyr Asp Thr Val Val His Pro Phe Tyr Ala Tyr											
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Trp Gln Ser Phe Cys Thr Gln Lys Asn Phe Ala Trp Lys Glu Glu Tyr											
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Glu Asn Lys Lys Ile Arg Asp Lys Ala Arg Lys Glu Lys Asn Glu Leu											
				190						195	200
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Val Arg Gln Leu Val Ala Phe Ile Arg Lys Arg Asp Lys Arg Val Gln											
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	270	275	280
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Ser Asp Glu Asn Glu Met Glu Glu His Glu Leu Lys Asp Glu Glu Asp			
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ggt aaa gac agt gat gag gcc gag gac gct gag ctc tat gat gac ctt			964
Gly Lys Asp Ser Asp Glu Ala Glu Asp Ala Glu Leu Tyr Asp Asp Leu			
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Tyr Cys Pro Ala Cys Asp Lys Ser Phe Lys Thr Glu Lys Ala Met Lys			
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Pro Cys Asp Asp Pro Lys Ser Glu Ala Lys Ser Val Pro Lys Pro Lys			
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Gly Lys Lys Thr Lys Asp Met Lys Lys Pro Val Arg Val Pro Ala Glu	
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Pro Gln Thr Met Ser Val Leu Ile Ser Cys Thr Thr Cys His Ser Glu	
475 480 485 490	
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Phe Pro Ser Arg Asn Lys Leu Phe Asp His Leu Lys Ala Thr Gly His	
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Ala Arg Ala Pro Ser Ser Ser Ser Leu Asn Ser Ala Thr Ser Ser Gln	
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Ser Lys Lys Glu Lys Arg Lys Asn Arg *	
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Glu Leu Phe Ser Glu Ser Arg Arg Leu Ala Leu Glu Glu Leu Val Ala
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Gly Gly Pro Glu Ala Phe Ala Ala Phe Leu Arg Arg Glu Arg Leu Ala
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cgt ttc ctg aac ccc gat gag gtg cac gcc att ctg cgc gcg gcg gag 245
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Ser	Asp	Leu	Glu	Pro	Pro	Leu	Leu	Glu	Leu	Gly	Trp	Pro	Ala	Phe	Tyr	
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Gln Gly Ala Tyr Arg Gly Ala Thr Arg Val Glu Thr His Phe Gln Pro
125 130 135

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140 145 150

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ccc tgc ggg ggg agc ggt ggt ggt ggc ggc ggc ggc ggc ggc ggc 855
Pro Cys Gly Gly Ser Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
45 50 55

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Ser Ser Ser Ser Ser Ser Pro Thr Ser Gly Ser Pro Arg Gly Ser His			
75	80	85	
tct agc gcc ctg gag agg cta gaa acc aag ctt cac ctc ctc agg caa			999
Ser Ser Ala Leu Glu Arg Leu Glu Thr Lys Leu His Leu Leu Arg Gln			
90	95	100	105
gag atg gtt aac ctc aga gcc aca gac gtc agg ctc atg cgc cag ttg			1047
Glu Met Val Asn Leu Arg Ala Thr Asp Val Arg Leu Met Arg Gln Leu			
110	115	120	
ctt gta atc aat gag agc atc gag tcc atc aag tgg atg atc gaa gaa			1095
Leu Val Ile Asn Glu Ser Ile Glu Ser Ile Lys Trp Met Ile Glu Glu			
125	130	135	
aaa gcc acc att acc agc aga ggc agc agc ctc agt ggc agc ctg tgc			1143
Lys Ala Thr Ile Thr Ser Arg Gly Ser Ser Leu Ser Gly Ser Leu Cys			
140	145	150	
agt ttg ttg gag agt cag agc acc tcc tta cgt ggc agc tac aac agc			1191
Ser Leu Leu Glu Ser Gln Ser Thr Ser Leu Arg Gly Ser Tyr Asn Ser			
155	160	165	
cta cac gat ggc agt gat ggg ctg gat ggc att tcc gtg gga agt tat			1239
Leu His Asp Gly Ser Asp Gly Leu Asp Gly Ile Ser Val Gly Ser Tyr			
170	175	180	185
ctg gac acg ttg gcg gat gat gtc cca ggc cat cag acc cct tca gac			1287
Leu Asp Thr Leu Ala Asp Asp Val Pro Gly His Gln Thr Pro Ser Asp			
190	195	200	
ttg gac caa ttc agt gac agc tcc ctc ata gag gac tca cag gca cta			1335
Leu Asp Gln Phe Ser Asp Ser Ser Leu Ile Glu Asp Ser Gln Ala Leu			
205	210	215	
cac aag cgt cct aaa ttg gat tct gaa tac tac tgc ttt ggc tag tga			1383
His Lys Arg Pro Lys Leu Asp Ser Glu Tyr Tyr Cys Phe Gly *			
220	225	230	
cagttttttg catgggactg gtgtgcaatg aacttgtatt tatccttctt ctccgctgct			1443
atattttttgg tgtgattttt attttaataa gatgaccttt ttaaaagaag ctgattttga			1503
aactgcttaa tgggtattgct gttgctccta atactttctca tctgagctga tttatttttc			1563
tctgttacat ctctattttt tatttattac aatgattttc tcccttcttt tacagtagca			1623
caaacaaagt agggggaaaa gaataagcaa taattatggt tttgcttttg ttttcagagc			1683
aatgggtcag ggattacaag aaaaactttg ctaaatttta caataaacca aagtctgata			1743
acagttaaaa aaaaaaaaaa			1762

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 Met
 1
 aag gcc ttt ggt cct cca cat gag ggc ccc ctc caa gga ctc gtg gcc 166
 Lys Ala Phe Gly Pro Pro His Glu Gly Pro Leu Gln Gly Leu Val Ala
 5 10 15
 tcc cgc att gag act tat ggg ggc cgg cat cga gcc tct gct cag agc 214
 Ser Arg Ile Glu Thr Tyr Gly Gly Arg His Arg Ala Ser Ala Gln Ser
 20 25 30
 act act ggc aga ctc tat ccc cga gga tac cct gtg ctg gat ccc agt 262
 Thr Thr Gly Arg Leu Tyr Pro Arg Gly Tyr Pro Val Leu Asp Pro Ser
 35 40 45
 cgc cga cgc ctc cag cag tat gtc ccc ttt gcc agg ggt tct ggc cag 310
 Arg Arg Arg Leu Gln Gln Tyr Val Pro Phe Ala Arg Gly Ser Gly Gln
 50 55 60 65
 gcc cga ggc ctg tca ccc atg aga ctg cga gat cca gag ccc gag aag 358
 Ala Arg Gly Leu Ser Pro Met Arg Leu Arg Asp Pro Glu Pro Glu Lys
 70 75 80
 agg cac ggg ggc cat gtg ggg gct ggc ctg ctt cac tcc ccc aaa ctc 406
 Arg His Gly Gly His Val Gly Ala Gly Leu Leu His Ser Pro Lys Leu
 85 90 95
 aag gaa ctc acc aag gcc cat gag ctg gag gtg agg ctg cac act ttc 454
 Lys Glu Leu Thr Lys Ala His Glu Leu Glu Val Arg Leu His Thr Phe
 100 105 110
 agc atg ttt ggg atg ccc cgg ctg ccc cct gag gac cgg cgg cac tgg 502
 Ser Met Phe Gly Met Pro Arg Leu Pro Pro Glu Asp Arg Arg His Trp
 115 120 125
 gag ata gga gag ggt ggc gac agt ggc ctg acc atc gag aag tcc tgg 550
 Glu Ile Gly Glu Gly Gly Asp Ser Gly Leu Thr Ile Glu Lys Ser Trp
 130 135 140 145
 agg gag ctg gtg cct ggg cac aag gag atg agc cag gag ctc tgc cac 598
 Arg Glu Leu Val Pro Gly His Lys Glu Met Ser Gln Glu Leu Cys His
 150 155 160

caa Gln	cag Gln	gag Glu	gcc Ala 165	ctg Leu	tgg Trp	gag Glu	ctc Leu	ctg Leu	acc Thr	acc Thr	gag Glu	ctg Leu	atc Ile 175	tac Tyr	gtg Val	646
aga Arg	aag Lys	ctc Leu 180	aag Lys	atc Ile	atg Met	act Thr	gat Asp 185	ctg Leu	cta Leu	gcc Ala	gcc Ala	ggc Gly 190	ctg Leu	ctg Leu	aac Asn	694
ctg Leu	cag Gln 195	cga Arg	gtg Val	gga Gly	ctg Leu	ctg Leu	atg Met 200	gaa Glu	gtg Val	tca Ser	gct Ala 205	gag Glu	acc Thr	ctg Leu	ttt Phe	742
gga Gly 210	aat Asn	gtc Val	ccc Pro	agc Ser	ctg Leu 215	att Ile	cga Arg	acc Thr	cac His	cgg Arg 220	agc Ser	ttt Phe	tgg Trp	gat Asp	gag Glu 225	790
gtg Val	ctg Leu	ggg Gly	ccc Pro	acc Thr 230	ctg Leu	gag Glu	gag Glu	act Thr	cgg Arg 235	gcc Ala	tcg Ser	ggc Gly	cag Gln	cct Pro 240	ctg Leu	838
gac Asp	ccc Pro	att Ile	ggg Gly 245	ctg Leu	caa Gln	agt Ser	ggc Gly	ttc Phe 250	ctg Leu	acg Thr	ttt Phe	ggc Gly	cag Gln 255	cgg Arg	ttc Phe	886
cac His	ccc Pro	tat Tyr 260	gtc Val	cag Gln	tac Tyr	tgc Cys	ctc Leu 265	cga Arg	gtg Val	aag Lys	cag Gln	acc Thr 270	atg Met	gct Ala	tac Tyr	934
gcc Ala 275	cga Arg	gaa Glu	cag Gln	caa Gln	gaa Glu	act Thr 280	aac Asn	cct Pro	ctc Leu	ttc Phe	cat His 285	gcc Ala	ttc Phe	gtg Val	cag Gln	982
tgg Trp 290	tgt Cys	gag Glu	aag Lys	cac His	aag Lys 295	cgc Arg	tct Ser	ggg Gly	agg Arg	cag Gln 300	atg Met	ctc Leu	tgt Cys	gac Asp	ttg Leu 305	1030
ctt Leu	atc Ile	aag Lys	ccc Pro	cac His 310	cag Gln	cgc Arg	atc Ile	acc Thr	aag Lys 315	tac Tyr	cca Pro	ctg Leu	ctg Leu	ctc Leu 320	cat His	1078
gct Ala	gtg Val	ctc Leu	aag Lys 325	agg Arg	agc Ser	ccc Pro	gag Glu	gca Ala 330	cga Arg	gcc Ala	caa Gln	gag Glu	gcc Ala 335	ctg Leu	aat Asn	1126
gcc Ala	atg Met	att Ile 340	gaa Glu	gcc Ala	gtg Val	gag Glu	tca Ser 345	ttc Phe	ctg Leu	cga Arg	cat His 350	atc Ile	aat Asn	ggg Gly	cag Gln	1174
gtc Val	cgc Arg 355	cag Gln	ggc Gly	gaa Glu	gag Glu	caa Gln 360	gag Glu	agc Ser	ttg Leu	gcg Ala	gct Ala 365	gca Ala	gca Ala	caa Gln	cgc Arg	1222
atc Ile 370	ggg Gly	ccc Pro	tac Tyr	gag Glu	gtg Val 375	ctg Leu	gag Glu	cca Pro	ccc Pro	agt Ser 380	gat Asp	gag Glu	gtg Val	gag Glu	aag Lys 385	1270

Gln Arg Ala Leu Arg Arg Asp Pro Arg Leu Thr Phe Ser Thr Leu Glu	
610 615 620 625	
ctc cgg gac atc cct ctg cgt ccc cac cct ccc gac ccc caa gct cct	2038
Leu Arg Asp Ile Pro Leu Arg Pro His Pro Pro Asp Pro Gln Ala Pro	
630 635 640	
caa cgc cga agc gcc ccc gaa ctg ccg gaa gga atc cta aaa gga ggc	2086
Gln Arg Arg Ser Ala Pro Glu Leu Pro Glu Gly Ile Leu Lys Gly Gly	
645 650 655	
agt ctt ccc cag gaa gac cca cca acc tgg tct gag gaa gaa gat ggg	2134
Ser Leu Pro Gln Glu Asp Pro Pro Thr Trp Ser Glu Glu Glu Asp Gly	
660 665 670	
gcc tcc gag cga ggg aat gtg gtg gtg gaa aca ctc cac agg gcc cgg	2182
Ala Ser Glu Arg Gly Asn Val Val Val Glu Thr Leu His Arg Ala Arg	
675 680 685	
ctt cgg ggc cag ctt ccc tcc tcc cca acc cat gct gac tct gcc ggg	2230
Leu Arg Gly Gln Leu Pro Ser Ser Pro Thr His Ala Asp Ser Ala Gly	
690 695 700 705	
gaa agc ccc tgg gag tcc tca ggg gag gag gaa gaa gag ggg cct ctg	2278
Glu Ser Pro Trp Glu Ser Ser Gly Glu Glu Glu Glu Gly Pro Leu	
710 715 720	
ttc ctg aaa gct ggc cac aca tcc ctg cgc cca atg cgg gct gag gac	2326
Phe Leu Lys Ala Gly His Thr Ser Leu Arg Pro Met Arg Ala Glu Asp	
725 730 735	
atg ctc aga gag atc cgg gag gag ctg gcc agc caa agg att gag ggg	2374
Met Leu Arg Glu Ile Arg Glu Glu Leu Ala Ser Gln Arg Ile Glu Gly	
740 745 750	
gcc gag gag ccc cgg gac agc agg cca cgg aag ctg act cgg gcc cag	2422
Ala Glu Glu Pro Arg Asp Ser Arg Pro Arg Lys Leu Thr Arg Ala Gln	
755 760 765	
ctg cag agg atg cgg ggg ccc cac atc att cag ctg gac acc cct ctg	2470
Leu Gln Arg Met Arg Gly Pro His Ile Ile Gln Leu Asp Thr Pro Leu	
770 775 780 785	
tcc gca tca gag gta tga ggaatg cagaggacct ttggcatgca tctctcccag	2524
Ser Ala Ser Glu Val *	
790	
aggagatctc tccccagtag tgctggtcac cctccggcat ctgtgactct acctcaagga	2584
ccacatttcc caaaggaagc ctggcccagg caccctgcct cctgctctgt ttggggatca	2644
agaactgtaa atttatgtat cataggtgca cctgagcccc acagaaaagt gtgcataaaa	2704
atgactgcc tggctgggca tggctgcctg taatcccagc actttgggag gctgaggtgg	2764
gaggatccct tgagcccagg agttccagac cagcctgggc aatataggga aaccctgtct	2824

ttacaaaaaa aaatttttaa aattaaaaaa aaaaaa

2860

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cacgtgcata tgatcaactt tggacttctt ttgagattgc caggcgtttg ca atg 175
Met
1
gct gct act gtg aac ttg gaa ctt gat ccc att ttt ttg aaa gca cta 223
Ala Ala Thr Val Asn Leu Glu Leu Asp Pro Ile Phe Leu Lys Ala Leu
5 10 15
ggg ttc ttg cat tca aag agt aaa gat tct gct gaa aag cta aaa gca 271
Gly Phe Leu His Ser Lys Ser Lys Asp Ser Ala Glu Lys Leu Lys Ala
20 25 30
ctg ctt gat gaa tct ttg gct cgg ggc att gat tcc agt tac cgt cca 319
Leu Leu Asp Glu Ser Leu Ala Arg Gly Ile Asp Ser Ser Tyr Arg Pro
35 40 45
tct caa aag gat gtg gag cca ccc aaa att tca agc aca aaa aac att 367
Ser Gln Lys Asp Val Glu Pro Pro Lys Ile Ser Ser Thr Lys Asn Ile
50 55 60 65
tcc att aag caa gag ccc aaa ata tca tcc agt ctt cct tct ggt aat 415
Ser Ile Lys Gln Glu Pro Lys Ile Ser Ser Ser Leu Pro Ser Gly Asn
70 75 80
aat aat ggc aag gtc ctc aca act gaa aag gta aag aag gaa gct gaa 463
Asn Asn Gly Lys Val Leu Thr Thr Glu Lys Val Lys Lys Glu Ala Glu
85 90 95
aag aga cct gct gat aaa atg aaa tca gac atc act gaa gga gtt gat 511
Lys Arg Pro Ala Asp Lys Met Lys Ser Asp Ile Thr Glu Gly Val Asp
100 105 110
att cca aag aaa cct aga ttg gag aaa cca gaa aca cag tca tct ccc 559
Ile Pro Lys Lys Pro Arg Leu Glu Lys Pro Glu Thr Gln Ser Ser Pro
115 120 125
att act gtc caa agt agc aag gat tta cct atg gct gac ctt tcc agt 607
Ile Thr Val Gln Ser Ser Lys Asp Leu Pro Met Ala Asp Leu Ser Ser

130	135	140	145	
ttt gag gag acc agt gct gat gat ttt gcc atg gag atg gga ttg gcc				655
Phe Glu Glu Thr Ser Ala Asp Asp Phe Ala Met Glu Met Gly Leu Ala	150	155	160	
tgc gtt gtt tgt agg caa atg atg gtg gca tct ggc aat caa tta gta				703
Cys Val Val Cys Arg Gln Met Met Val Ala Ser Gly Asn Gln Leu Val	165	170	175	
gaa tgt cag gag tgc cat aat ctc tac cac cga gat tgt cat aaa ccc				751
Glu Cys Gln Glu Cys His Asn Leu Tyr His Arg Asp Cys His Lys Pro	180	185	190	
cag gtg aca gac aag gaa gcg aat gac cct cgc ctg gtg tgg tat tgt				799
Gln Val Thr Asp Lys Glu Ala Asn Asp Pro Arg Leu Val Trp Tyr Cys	195	200	205	
gcc cga tgt acc aga caa atg aaa aga atg gct caa aaa act cag aaa				847
Ala Arg Cys Thr Arg Gln Met Lys Arg Met Ala Gln Lys Thr Gln Lys	210	215	220	225
cca ccg cag aaa cca gcc cct gca gtt gtt tct gta act cca gct gtc				895
Pro Pro Gln Lys Pro Ala Pro Ala Val Val Ser Val Thr Pro Ala Val	230	235	240	
aaa gat cca ttg gtt aag aaa cca gaa act aaa ctg aaa caa gag aca				943
Lys Asp Pro Leu Val Lys Lys Pro Glu Thr Lys Leu Lys Gln Glu Thr	245	250	255	
act ttt cta gcg ttt aag aga aca gaa gtc aag aca tcc aca gtt att				991
Thr Phe Leu Ala Phe Lys Arg Thr Glu Val Lys Thr Ser Thr Val Ile	260	265	270	
tca gga aat tct tct agt gcc agc gtt tcc tcg tca gta act agt ggc				1039
Ser Gly Asn Ser Ser Ser Ala Ser Val Ser Ser Ser Val Thr Ser Gly	275	280	285	
tta act gga tgg gca gct ttt gca gcc aaa act tcc tct gct ggt cct				1087
Leu Thr Gly Trp Ala Ala Phe Ala Ala Lys Thr Ser Ser Ala Gly Pro	290	295	300	305
tca aca gca aaa ttg agt tca aca aca caa aac aat act ggg aaa cct				1135
Ser Thr Ala Lys Leu Ser Ser Thr Thr Gln Asn Asn Thr Gly Lys Pro	310	315	320	
gct act tcg tca gct aac cag aaa cct gtg ggt ttg act ggt ctg gca				1183
Ala Thr Ser Ser Ala Asn Gln Lys Pro Val Gly Leu Thr Gly Leu Ala	325	330	335	
aca tca tcc aaa ggt gga ata ggt tcc aaa ata ggt tcc aat aac agc				1231
Thr Ser Ser Lys Gly Gly Ile Gly Ser Lys Ile Gly Ser Asn Asn Ser	340	345	350	
act acg ccc act gta cct tta aaa cca cct cca cct cta acc ttg ggt				1279
Thr Thr Pro Thr Val Pro Leu Lys Pro Pro Pro Pro Leu Thr Leu Gly	355	360	365	

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aaa act ggc ctt agt cgc tca gtt agt tgt gac aat gtc agc aaa gta      1327
Lys Thr Gly Leu Ser Arg Ser Val Ser Cys Asp Asn Val Ser Lys Val
370                               375                               380                               385

ggt ctt cct agt cca agt agt tta gtt cca gga agc agc agc caa cta      1375
Gly Leu Pro Ser Pro Ser Ser Leu Val Pro Gly Ser Ser Ser Gln Leu
                               390                               395                               400

agt ggg aat gga aat agt gga aca tca gga cct agt gga agt act acc      1423
Ser Gly Asn Gly Asn Ser Gly Thr Ser Gly Pro Ser Gly Ser Thr Thr
                               405                               410                               415

agc aaa act act tca gaa tcc agc agc tct ccc tca gca tcc ctt aaa      1471
Ser Lys Thr Thr Ser Glu Ser Ser Ser Ser Pro Ser Ala Ser Leu Lys
                               420                               425                               430

ggc cca act tca caa gaa tca cag ctc aat gct atg aag cga tta cag      1519
Gly Pro Thr Ser Gln Glu Ser Gln Leu Asn Ala Met Lys Arg Leu Gln
                               435                               440                               445

atg gtc aag aag aaa gct gcc caa aag aaa ctc aag aag taa tgtggcc      1568
Met Val Lys Lys Lys Ala Ala Gln Lys Lys Leu Lys Lys *
450                               455                               460

aagtaggttt ttgtatcata ttagcctaaa gatgaaaggc ttattattat gatataatct      1628

gtaatacact gtaatttaat aaaagtcttc ataatcaaaa aaaaaaaaaa      1676

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<213> Homo sapiens

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<222> (158)..(1051)

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tcgccagcga gggatgcgga gacgcccttg aacgacc atg gca tcg gcc gac gag      175
                               Met Ala Ser Ala Asp Glu
                               1                               5

ctg acc ttc cat gaa ttc gag gag gcc act aat ctt ctg gct gac acc      223
Leu Thr Phe His Glu Phe Glu Glu Ala Thr Asn Leu Leu Ala Asp Thr
                               10                               15                               20

cca gat gca gcc acc acc agc aga agc gat cag ctg acc cca caa ggg      271
Pro Asp Ala Ala Thr Thr Ser Arg Ser Asp Gln Leu Thr Pro Gln Gly
                               25                               30                               35

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cac	gtg	gct	gtg	gcc	gtg	ggc	tca	ggt	ggc	agc	tat	gga	gcc	gag	gat	319
His	Val	Ala	Val	Ala	Val	Gly	Ser	Gly	Gly	Ser	Tyr	Gly	Ala	Glu	Asp	
	40					45					50					
gag	gtg	gag	gag	gag	agt	gac	aag	gcc	gcg	ctc	ctg	cag	gag	cag	cag	367
Glu	Val	Glu	Glu	Glu	Ser	Asp	Lys	Ala	Ala	Leu	Leu	Gln	Glu	Gln	Gln	
	55				60					65					70	
cag	cag	cag	cag	ccg	gga	ttc	tgg	acc	ttc	agc	tac	tat	cag	agc	ttc	415
Gln	Gln	Gln	Gln	Pro	Gly	Phe	Trp	Thr	Phe	Ser	Tyr	Tyr	Gln	Ser	Phe	
				75					80					85		
ttt	gac	gtg	gac	acc	tca	cag	gtc	ctg	gac	cgg	atc	aaa	ggc	tca	ctg	463
Phe	Asp	Val	Asp	Thr	Ser	Gln	Val	Leu	Asp	Arg	Ile	Lys	Gly	Ser	Leu	
			90					95					100			
ctg	ccc	cgg	cct	ggc	cac	aac	ttt	gtg	cgg	cac	cat	ctg	cgg	aat	cgg	511
Leu	Pro	Arg	Pro	Gly	His	Asn	Phe	Val	Arg	His	His	Leu	Arg	Asn	Arg	
		105					110					115				
ccg	gat	ctg	tat	ggc	ccc	ttc	tgg	atc	tgt	gcc	acg	ttg	gcc	ttt	gtc	559
Pro	Asp	Leu	Tyr	Gly	Pro	Phe	Trp	Ile	Cys	Ala	Thr	Leu	Ala	Phe	Val	
	120					125					130					
ctg	gcc	gtc	act	ggc	aac	ctg	acg	ctg	gtg	ctg	gcc	cag	agg	agg	gac	607
Leu	Ala	Val	Thr	Gly	Asn	Leu	Thr	Leu	Val	Leu	Ala	Gln	Arg	Arg	Asp	
135					140					145					150	
ccc	tcc	atc	cac	tac	agc	ccc	cag	ttc	cac	aag	gtg	acc	gtg	gca	ggc	655
Pro	Ser	Ile	His	Tyr	Ser	Pro	Gln	Phe	His	Lys	Val	Thr	Val	Ala	Gly	
				155					160					165		
atc	agc	atc	tac	tgc	tat	gcg	tgg	ctg	gtg	ccc	ctg	gcc	ctg	tgg	ggc	703
Ile	Ser	Ile	Tyr	Cys	Tyr	Ala	Trp	Leu	Val	Pro	Leu	Ala	Leu	Trp	Gly	
			170					175					180			
ttc	ctg	cgg	tgg	cgc	aag	ggt	gtc	cag	gag	cgc	atg	ggg	ccc	tac	acc	751
Phe	Leu	Arg	Trp	Arg	Lys	Gly	Val	Gln	Glu	Arg	Met	Gly	Pro	Tyr	Thr	
		185				190						195				
ttc	ctg	gag	act	gtg	tgc	atc	tac	ggc	tac	tcc	ctc	ttt	gtc	ttc	atc	799
Phe	Leu	Glu	Thr	Val	Cys	Ile	Tyr	Gly	Tyr	Ser	Leu	Phe	Val	Phe	Ile	
	200					205					210					
ccc	atg	gtg	gtc	ctg	tgg	ctc	atc	cct	gtg	cct	tgg	ctg	cag	tgg	ctc	847
Pro	Met	Val	Val	Leu	Trp	Leu	Ile	Pro	Val	Pro	Trp	Leu	Gln	Trp	Leu	
215					220					225					230	
ttt	ggg	gcg	ctg	gcc	ctg	ggc	ctg	tca	gcc	gcc	ggg	ctg	gta	ttc	acc	895
Phe	Gly	Ala	Leu	Ala	Leu	Gly	Leu	Ser	Ala	Ala	Gly	Leu	Val	Phe	Thr	
			235						240					245		
ctc	tgg	ccc	gtg	gtc	cgt	gag	gac	acc	agg	ctg	gtg	gcc	aca	gtg	ctg	943
Leu	Trp	Pro	Val	Val	Arg	Glu	Asp	Thr	Arg	Leu	Val	Ala	Thr	Val	Leu	
			250					255					260			

ctg tcc gtg gtc gtg ctg ctc cag gcc ctc ctg gcc atg ggc tgt gaa	991
Leu Ser Val Val Val Leu Leu Gln Ala Leu Leu Ala Met Gly Cys Glu	
265 270 275	
gtt gga ctt ctt ccg gtg tgc ctc ggg gac gtg gtc ctc ccc cca ttc	1039
Val Gly Leu Leu Pro Val Cys Leu Gly Asp Val Val Leu Pro Pro Phe	
280 285 290	
att ttg ccc taa att gggggcctac tgtcggggccg ggcccctcag aggcggggccg	1094
Ile Leu Pro *	
295	
gcccttggac ccttgg	1110

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atg gcc	
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Gly Thr Gly Leu Leu Ala Leu Arg Thr Leu Pro Gly Pro Ser Trp Val	
5 10 15	
cga ggc tcg ggc cct tcc gtg ctg agc cgc ctg cag gac gcg gcc gtg	152
Arg Gly Ser Gly Pro Ser Val Leu Ser Arg Leu Gln Asp Ala Ala Val	
20 25 30	
gtg cgg cct ggc ttc ctg agc acg gca gag gag gag acg ctg agc cga	200
Val Arg Pro Gly Phe Leu Ser Thr Ala Glu Glu Glu Thr Leu Ser Arg	
35 40 45 50	
gaa ctg gag ccc gag ctg cgc cgc cgc cgc tac gaa tac gat cac tgg	248
Glu Leu Glu Pro Glu Leu Arg Arg Arg Arg Tyr Glu Tyr Asp His Trp	
55 60 65	
gac gcg gcc atc cac ggc ttc cga gag aca gag aag tcg cgc tgg tca	296
Asp Ala Ala Ile His Gly Phe Arg Glu Thr Glu Lys Ser Arg Trp Ser	
70 75 80	
gaa gcc agc cgg gcc atc ctg cag cgc gtg cag gcg gcc gcc ttt ggc	344
Glu Ala Ser Arg Ala Ile Leu Gln Arg Val Gln Ala Ala Ala Phe Gly	
85 90 95	
ccc ggc cag acc ctg ctc tcc tcc gtg cac gtg ctg gac ctg gaa gcc	392
Pro Gly Gln Thr Leu Leu Ser Ser Val His Val Leu Asp Leu Glu Ala	

100	105	110	
cgc ggc tac atc aag ccc cac gtg gac agc atc aag ttc tgc ggg gcc			440
Arg Gly Tyr Ile Lys Pro His Val Asp Ser Ile Lys Phe Cys Gly Ala			
115	120	125	130
acc atc gcc ggc ctg tct ctc ctg tct ccc agc gtt atg cgg ctg gtg			488
Thr Ile Ala Gly Leu Ser Leu Leu Ser Pro Ser Val Met Arg Leu Val			
	135	140	145
cac acc cag gag ccg ggg gag tgg ctg gaa ctc ttg ctg gag ccg ggc			536
His Thr Gln Glu Pro Gly Glu Trp Leu Glu Leu Leu Glu Pro Gly			
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Ser Leu Tyr Ile Leu Arg Gly Ser Ala Arg Tyr Asp Phe Ser His Glu			
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atc ctt cgg gat gaa gag tcc ttc ttt ggg gaa cgc cag att ccc cgg			632
Ile Leu Arg Asp Glu Glu Ser Phe Phe Gly Glu Arg Gln Ile Pro Arg			
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Gly Arg Arg Ile Ser Val Ile Cys Arg Ser Leu Pro Glu Gly Met Gly			
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Pro Gly Glu Ser Gly Gln Pro Pro Pro Ala Cys *			
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gctgcttgct ggggccggga tttgcagggg aaccaggat ggcaactggcc catagggagc			850
tccaggtgtg gctggctgga cacatgggtca aagtcacaag gccgggagag tgggtgtcctt			910
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 Met Asn Thr Val Leu Ser Arg Ala Asn Ser Leu Phe
 1 5 10
 gcc ttc tgc ctg agc gtg atg gcg gcg ctc acc ttc ggc tgc ttc atc 277
 Ala Phe Ser Leu Ser Val Met Ala Ala Leu Thr Phe Gly Cys Phe Ile
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 Thr Thr Ala Phe Lys Asp Arg Ser Val Pro Val Arg Leu His Val Ser
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 Arg Ile Ile Leu Lys Asn Val Glu Asp Phe Thr Gly Pro Arg Glu Arg
 45 50 55 60
 agt gat ctg gga ttt atc aca ttt gat ata act gct gat cta gag aat 421
 Ser Asp Leu Gly Phe Ile Thr Phe Asp Ile Thr Ala Asp Leu Glu Asn
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 Ile Phe Asp Trp Asn Val Lys Gln Leu Phe Leu Tyr Leu Ser Ala Glu
 80 85 90
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 Tyr Ser Thr Lys Asn Asn Ala Leu Asn Gln Val Val Leu Trp Asp Lys
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 Ile Val Leu Arg Gly Asp Asn Pro Lys Leu Leu Leu Lys Asp Met Lys
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 Thr Lys Tyr Phe Phe Phe Asp Asp Gly Asn Gly Leu Lys Gly Asn Arg
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 Leu Pro Leu Val Thr Gly Ser Gly His Val Ser Val Pro Phe Pro Asp
 160 165 170
 aca tat gaa ata acg aag agt tat taa attat tctgaatttg aaacaacata 761
 Thr Tyr Glu Ile Thr Lys Ser Tyr *
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caagaaaact gctattttga ttcagagaaa atatcgggca catctttgta caaagcatca      300
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ttgtgcaaaa cataaattgt accaattctt gcacttaaga aaggcagcca ttacaatata      780
gtcatcttac agaagactga tggtaaagaa gaagttacaa gaaatgcaaa gggctgcagt      840
tctcattcag gctactttca ggatgcacag aaaaaaaaaat atattacatt tcagacttgg      900
aaacatgctt caattctaattcagcaacat tatcgaacat atagagctgc aaaattgcaa      960
agagaaaatt atatcagaca atggcattct gctgtggtta ttcaggctgc atataaagga     1020
atg aaa gca aga caa ctt tta agg gaa aaa cac aaa gct tct atc gta     1068
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ata caa agc acc tac aga atg tat agg cag tat tgt ttc tac caa aag     1116
Ile Gln Ser Thr Tyr Arg Met Tyr Arg Gln Tyr Cys Phe Tyr Gln Lys
          20           25           30

ctt cag tgg gct aca aaa atc ata caa gaa aaa tat aga gca aat aaa     1164
Leu Gln Trp Ala Thr Lys Ile Ile Gln Glu Lys Tyr Arg Ala Asn Lys
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aag aaa cag aaa gta ttt caa cac aat gaa ctt aag aaa gag act tgt     1212

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gca Ala 545	ctg Leu	gtg Val	cgt Arg	ggc Gly	tgg Trp 550	cta Leu	gta Val	cga Arg	aaa Lys 555	aga Arg	ttt Phe	tta Leu	gaa Glu	cag Gln	aga Arg 560	2700
gcc Ala	aaa Lys	att Ile	cga Arg	ctt Leu 565	ctt Leu	cac His	ttc Phe	act Thr	gca Ala 570	gct Ala	gca Ala	tat Tyr	tat Tyr	cac His 575	ctg Leu	2748
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aga Arg	ggc Gly 675	tat Tyr	tct Ser	tgg Trp	agg Arg	aag Lys	aaa Lys 680	aat Asn	gat Asp	tgt Cys	aca Thr	aaa Lys 685	att Ile	aaa Lys	gct Ala	3084
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aag Lys	cac His	ctt Leu	tct Ser	gcc Ala 725	att Ile	ctt Leu	gag Glu	gcc Ala	tta Leu 730	aaa Lys	cac His	cta Leu	gag Glu	gta Val 735	gtt Val	3228

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Cys Met Glu Val Ile Arg Tyr Ala Val Gln Val Leu Leu Asn Val Ser	
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Lys Tyr Glu Lys Thr Thr Ser Ala Val Tyr Asp Val Glu Asn Cys Ile	
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Asp Ile Leu Leu Glu Leu Leu Gln Ile Tyr Arg Glu Lys Pro Gly Asn	
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Arg Ser Lys Val Val Asp Arg Ile Tyr Ser Leu Tyr Lys Leu Thr Ala	
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Thr Leu Gly Ile Pro Tyr *	
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Thr Val Asp Ser Gln Lys Asp Cys Arg Lys Phe Pro Val Pro Gln Lys	
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Lys Arg Gly Ala His Gly Pro Gln Asp Leu Ala Asp Tyr Phe Gly Lys	
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Gly Leu Gln Val Glu Val Cys Pro Leu Asn Gly Cys Asp Tyr Ile Val	
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Ser Asn Arg Met Val Val Glu Arg Arg Ser Gln Ser Glu Met Leu Asn	
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Ser Val Asn Lys Asn Lys Phe Ile Glu Gln Ile Gln His Leu Gln Ser	
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Met Phe Glu Arg Ile Cys Val Ile Val Glu Lys Asp Arg Glu Lys Thr	
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Gly Asp Thr Ser Arg Met Phe Arg Arg Thr Lys Ser Tyr Asp Ser Leu	
430 435 440	
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Ile	Val	Ser	Phe	Leu	Leu	Arg	Arg	Asn	Ala	Asn	Val	Asn	Leu	Lys	Asn	
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Phe	Ile	Asp	Tyr	Leu	Leu	Ile	Ile	Leu	Leu	Met	Pro	Val	Leu	Leu	Ile	
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Arg	Met	Leu	Leu	Asp	Ala	Gly	Val	Glu	Val	Asn	Ala	Thr	Asp	Cys	Tyr	
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Gly	Cys	Thr	Ala	Leu	His	Tyr	Ala	Cys	Glu	Met	Lys	Asn	Gln	Ser	Leu	
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Ile	Pro	Leu	Leu	Leu	Glu	Ala	Arg	Ala	Asp	Pro	Thr	Ile	Lys	Asn	Lys	
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cat	ggt	gag	agc	tca	ctg	gat	att	gca	cgg	aga	tta	aaa	ttt	tcc	cag	882
His	Gly	Glu	Ser	Ser	Leu	Asp	Ile	Ala	Arg	Arg	Leu	Lys	Phe	Ser	Gln	
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Ile	Glu	Leu	Met	Leu	Arg	Lys	Ala	Leu	*							
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gcaaattact taatctcagt aggcctcagt tctctctttc accaaatcag gagaattatt	180
ttttaaatca tcaactgtac attattat atg caa aac ata ctg gta gcc att Met Gln Asn Ile Leu Val Gly Ile	232
1 5	
atg tgg acc aaa aaa tat gac agc agg tgg tcc ttc cct ttt aag aaa Met Trp Thr Lys Lys Tyr Asp Ser Arg Trp Ser Phe Pro Phe Lys Lys	280
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25 30 35 40	
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45 50 55	
aag gga ctt tgc tgt ggg ctg aag tga ccagg aagggctccg tggaggaagt Lys Gly Leu Cys Cys Gly Leu Lys *	428
60 65	
ggggccaag gatggacagg acatgatgt ggcaggaaga gggagagcct taccagatgg	488
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Lys	Val	Asp	Val	Asp	Glu	Tyr	Asp	Glu	Asn	Lys	Phe	Val	Asp	Glu	Glu	
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Asp	Gly	Gly	Asp	Gly	Gln	Ala	Gly	Pro	Asp	Glu	Gly	Glu	Val	Asp	Ser	
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Cys	Leu	Arg	Gln	Gly	Asn	Met	Thr	Ala	Ala	Leu	Gln	Ala	Ala	Leu	Lys	
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Asn	Pro	Pro	Ile	Asn	Thr	Lys	Ser	Gln	Ala	Val	Lys	Val	Ser	Arg	Arg	
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Arg	Lys	His	Val	Val	Lys	Glu	Val	Leu	Gly	Glu	His	Ile	Val	Pro	Ser	
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gac	cag	cag	cag	att	gtc	agg	gta	ctc	agg	acc	cca	ggg	aac	aat	ctg	208
Asp	Gln	Gln	Gln	Ile	Val	Arg	Val	Leu	Arg	Thr	Pro	Gly	Asn	Asn	Leu	
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His	Glu	Val	Glu	Thr	Ala	Gln	Gly	Gln	Arg	Phe	Leu	Val	Ser	Met	Pro	
		40				45				50						
tcc	aaa	tac	cgc	aag	aac	atc	tgg	atc	aag	aga	ggg	gac	ttt	ctc	att	304

Ser Lys Tyr Arg Lys Asn Ile Trp Ile Lys Arg Gly Asp Phe Leu Ile
55 60 65 70

gtt gac ccc att gaa gag gga gaa aag gtg aag gct gaa atc tcg ttt 352
Val Asp Pro Ile Glu Glu Gly Glu Lys Val Lys Ala Glu Ile Ser Phe
75 80 85

gtg ctc tgc aag gac cac gtg cgc tct ctg cag aag gag ggg ttt tgg 400
Val Leu Cys Lys Asp His Val Arg Ser Leu Gln Lys Glu Gly Phe Trp
90 95 100

cct gag gcc ttc tct gaa gtg gct gag aaa cac aac aac agg aac aga 448
Pro Glu Ala Phe Ser Glu Val Ala Glu Lys His Asn Asn Arg Asn Arg
105 110 115

caa act caa cca gaa ctc cca gct gag cca cag tta tca gga gag gag 496
Gln Thr Gln Pro Glu Leu Pro Ala Glu Pro Gln Leu Ser Gly Glu Glu
120 125 130

tcc agc tca gaa gat gat tct gac ctg ttt gtt aac aca aac cgc aga 544
Ser Ser Ser Glu Asp Asp Ser Asp Leu Phe Val Asn Thr Asn Arg Arg
135 140 145 150

cag tat cat gag agt gag gag gag agt gaa gag gag gag gca gcc tga 592
Gln Tyr His Glu Ser Glu Glu Glu Ser Glu Glu Glu Glu Ala Ala *
155 160 165

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acattcccag ggtgctctgc acatcttcac ccctgcatga ggacaaagca gggctcctct 712

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Met Ala Glu Ser Leu Arg Ser Pro Arg Arg Ser Leu Tyr Lys
1 5 10

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Leu Val Gly Ser Pro Trp Lys Glu Ala Phe Arg Gln Arg Cys Leu
15 20 25 30

gag aga atg aga aac agc cgg gac agg ctc cta aac agg tac cgc cag 203

Glu Arg Met Arg Asn Ser Arg Asp Arg Leu Leu Asn Arg Tyr Arg Gln	
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Ala Gly Ser Ser Gly Pro Gly Asn Ser Gln Asn Ser Phe Leu Val Gln	
50 55 60	
gag gtg atg gaa gaa gag tgg aat gct ttg cag tca gtg gag aat tgt	299
Glu Val Met Glu Glu Glu Trp Asn Ala Leu Gln Ser Val Glu Asn Cys	
65 70 75	
cca gaa gac ttg gct cag ctg gag gag ctg ata gac atg gct gtg ctg	347
Pro Glu Asp Leu Ala Gln Leu Glu Glu Leu Ile Asp Met Ala Val Leu	
80 85 90	
gag gaa att caa cag gag ctg atc aac caa gag cag tcc atc atc agc	395
Glu Glu Ile Gln Gln Glu Leu Ile Asn Gln Glu Gln Ser Ile Ile Ser	
95 100 105 110	
gag tat gag aag agc ttg cag ttt gat gaa aag tgt ctc agc atc atg	443
Glu Tyr Glu Lys Ser Leu Gln Phe Asp Glu Lys Cys Leu Ser Ile Met	
115 120 125	
ctg gct gag tgg gag gca aac cca ctc atc tgt cct gta tgt aca aag	491
Leu Ala Glu Trp Glu Ala Asn Pro Leu Ile Cys Pro Val Cys Thr Lys	
130 135 140	
tac aac ctg aga atc aca agc ggt gtg gtg gtg tgt cag tgt ggc ctg	539
Tyr Asn Leu Arg Ile Thr Ser Gly Val Val Val Cys Gln Cys Gly Leu	
145 150 155	
tcc atc cca tct cat tct tct gag ttg aca gag cag aag ctt cgt gcc	587
Ser Ile Pro Ser His Ser Ser Glu Leu Thr Glu Gln Lys Leu Arg Ala	
160 165 170	
tgt tta gag ggt agt ata aat gag cac agt gca cat tgt ccc cac aca	635
Cys Leu Glu Gly Ser Ile Asn Glu His Ser Ala His Cys Pro His Thr	
175 180 185 190	
cct gaa ttt tca gtc act gga gga aca gaa gaa aag tcc agt ctt ctc	683
Pro Glu Phe Ser Val Thr Gly Gly Thr Glu Glu Lys Ser Ser Leu Leu	
195 200 205	
atg agc tgt ctg gcc tgt gat act tgg gct gtg atc ctc tag agccagc	732
Met Ser Cys Leu Ala Cys Asp Thr Trp Ala Val Ile Leu *	
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aaaaa	857

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cgctgggaag tatgtgccga gggccgcggc gtctgacctc atggcgtaga gcctagcaac      180
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                  1                5

agg ggg cca gca caa gcg aaa ctg ctg ccc ggg tcg gcc atc caa gcc      281
Arg Gly Pro Ala Gln Ala Lys Leu Leu Pro Gly Ser Ala Ile Gln Ala
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ctt gtg ggg ttg gcg cgg ccg ctg gtc ttg gcg ctc ctg ctt gtg tcc      329
Leu Val Gly Leu Ala Arg Pro Leu Val Leu Ala Leu Leu Leu Val Ser
                30                35                40

gcc gct cta tcc agt gtt gta tca cgg act gat tca ccg agc cca acc      377
Ala Ala Leu Ser Ser Val Val Ser Arg Thr Asp Ser Pro Ser Pro Thr
                45                50                55

gta ctc aac tca cat att tct acc cca aat gtg aat gct tta aca cat      425
Val Leu Asn Ser His Ile Ser Thr Pro Asn Val Asn Ala Leu Thr His
                60                65                70

gaa aac caa acc aaa cct tct att tcc caa atc agc acc acc ctc cct      473
Glu Asn Gln Thr Lys Pro Ser Ile Ser Gln Ile Ser Thr Thr Leu Pro
                75                80                85

ccc acg acg agt acc aag aaa agt gga gga gca tct gtg gtc cct cat      521
Pro Thr Thr Ser Thr Lys Lys Ser Gly Gly Ala Ser Val Val Pro His
                90                95                100                105

ccc tcg cct act cct ctg tct caa gag gaa gct gat aac aat gaa gat      569
Pro Ser Pro Thr Pro Leu Ser Gln Glu Glu Ala Asp Asn Asn Glu Asp
                110                115                120

cct agt ata gag gag gag gat ctt ctc atg ctg aac agt tct cca tcc      617
Pro Ser Ile Glu Glu Glu Asp Leu Leu Met Leu Asn Ser Ser Pro Ser
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aca gcc aaa gac act cta gac aat ggc gat tat gga gaa cca gac tat      665
Thr Ala Lys Asp Thr Leu Asp Asn Gly Asp Tyr Gly Glu Pro Asp Tyr
                140                145                150

gac tgg acc acg ggc ccc agg gac gac gac gag tct gat gac acc ttg      713
Asp Trp Thr Thr Gly Pro Arg Asp Asp Asp Glu Ser Asp Asp Thr Leu

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aag atg cca tcc tca aat ata gaa gag gaa gac agc cat ttc ttt ttt			809
Lys Met Pro Ser Ser Asn Ile Glu Glu Glu Asp Ser His Phe Phe Phe			
	190	195	200
cat ctt att att ttt gct ttt tgc att gct gtt gtt tac att aca tat			857
His Leu Ile Ile Phe Ala Phe Cys Ile Ala Val Val Tyr Ile Thr Tyr			
	205	210	215
cac aac aaa agg aag att ttt ctt ctg gtt caa agc agg aaa tgg cgt			905
His Asn Lys Arg Lys Ile Phe Leu Leu Val Gln Ser Arg Lys Trp Arg			
	220	225	230
gat ggc ctt tgt tcc aaa aca gtg gaa tac cat cgc cta gat cag aat			953
Asp Gly Leu Cys Ser Lys Thr Val Glu Tyr His Arg Leu Asp Gln Asn			
	235	240	245
gtt aat gag gca atg cct tct ttg aag att acc aat gat tat att ttt			1001
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tgtttggaag gatcttttgc atctctgaag gtgcttaaag catacttagt gccttttcctt	300
ttaactggga agataaaaaga agtatctgtc caagatatta atatgtaaga taacattgta	360
gacatgttct tctgataata caaggtttat tctatttgca ttaggatatt tgtggacatg	420

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                                     Met Val Ile Ser
                                     1
gaa aat att tgt att aag atg tgt ata cat ggc cag gca tgg tgg ctc 1303
Glu Asn Ile Cys Ile Lys Met Cys Ile His Gly Gln Ala Trp Trp Leu
  5                10                15                20

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Met Pro Val Ile Pro Ala Leu Trp Glu Ala Gly Gly Ser Arg Gly Gln
          25                30                35

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Glu Ile Lys Thr Ile Leu Ala Asn Met Val Lys Pro His Leu Tyr *
      40                45                50

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Figure 1. The effect of the concentration of the *Agrobacterium* strain on the transformation efficiency of *Agrobacterium* strain *Agrobacterium tumefaciens* (A. tumefaciens) on *Agrobacterium tumefaciens* (A. tumefaciens) and *Agrobacterium tumefaciens* (A. tumefaciens) on *Agrobacterium tumefaciens* (A. tumefaciens).

Figure 1. The effect of the concentration of the *Agrobacterium* strain on the transformation efficiency of *Agrobacterium* strain *Agrobacterium tumefaciens* (A. tumefaciens) on *Agrobacterium tumefaciens* (A. tumefaciens) and *Agrobacterium tumefaciens* (A. tumefaciens) on *Agrobacterium tumefaciens* (A. tumefaciens).

Figure 1. The effect of the concentration of the *Agrobacterium* strain on the transformation efficiency of *Agrobacterium* strain *Agrobacterium tumefaciens* (A. tumefaciens) on *Agrobacterium tumefaciens* (A. tumefaciens) and *Agrobacterium tumefaciens* (A. tumefaciens) on *Agrobacterium tumefaciens* (A. tumefaciens).

Figure 1. The effect of the concentration of the *Agrobacterium* strain on the transformation efficiency of *Agrobacterium* strain *Agrobacterium tumefaciens* (A. tumefaciens) on *Agrobacterium tumefaciens* (A. tumefaciens) and *Agrobacterium tumefaciens* (A. tumefaciens) on *Agrobacterium tumefaciens* (A. tumefaciens).

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gtt tat gat gca aaa ctt aca att gtt cat tta tcc aca ttc tca ata 1396
Val Tyr Asp Ala Lys Leu Thr Ile Val His Leu Ser Thr Phe Ser Ile
45 50 55

gag gat ttt cca cta tat tta agt atg gca gga taa ttac ccacctgttc 1446
Glu Asp Phe Pro Leu Tyr Leu Ser Met Ala Gly *
60 65

ctcttttcag cttagaaaca taacggttca ttccttttat tgctagagaa tgtcattcct 1506

gaagatttta taaacaaagg caaatatgaa ggaaaatttg taattatgaa ataagtcctt 1566

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acaagcatct tatccctcta caggaatgac taccttatta attaaaataa aaatttaaca 1686

aggatcaaaa taaaattctt tagcaataga ctcttgcaaa aataaaaaact aaaactagac 1746

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tctagaatag tcttaagtct atgactactg ctatcattaa tgagcaaata aatgacttga 1926

aattattccn cctggaaaag gtaaactcat acgtattatg gaaaangcct atggggcattt 1986

agaaaaatat tcctgggtaa gtaaaccatg gnaaatatag ggtacatcct aagcctctcc 2046

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<222> (267) .. (866)

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cttcacctgc tcctgctgct gcctttacaa gacgtgccgc cgaccacgtc cggttgtcac 240

caccaccaca tccaccactg tgggtgc atg ccc ctt atc ctc agc ctc caa gtg 293

Met Pro Leu Ile Leu Ser Leu Gln Val																
1								5								
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Cys	Arg	Pro	Ala	Thr	Arg	Gly	Pro	Ser	Tyr	Gln	Gly	Tyr	His	Thr	Met	
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Pro	Pro	Gln	Pro	Gly	Met	Pro	Ala	Ala	Thr	Leu	Pro	Asn	Ala	Gly	Lys	
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atg	gcg	gac	att	cag	act	gag	cgt	gcc	tac	caa	aag	cag	ccg	acc	atc	437
Met	Ala	Asp	Ile	Gln	Thr	Glu	Arg	Ala	Tyr	Gln	Lys	Gln	Pro	Thr	Ile	
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Phe	Gln	Asn	Lys	Lys	Arg	Val	Leu	Leu	Gly	Glu	Thr	Gly	Lys	Glu	Lys	
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ctc	ccg	cgg	tac	tac	aag	aac	atc	ggc	ctg	ggc	ttc	aag	aca	ccc	aag	533
Leu	Pro	Arg	Tyr	Tyr	Lys	Asn	Ile	Gly	Leu	Gly	Phe	Lys	Thr	Pro	Lys	
	75					80					85					
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Glu	Ala	Ile	Glu	Gly	Thr	Tyr	Ile	Asp	Lys	Lys	Cys	Pro	Phe	Thr	Gly	
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Asn	Val	Ser	Ile	Arg	Gly	Arg	Ile	Leu	Ser	Gly	Val	Val	Thr	Lys	Met	
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aag	atg	cag	agg	acc	att	gtc	atc	cgc	cga	gac	tat	ctg	cac	tac	atc	677
Lys	Met	Gln	Arg	Thr	Ile	Val	Ile	Arg	Arg	Asp	Tyr	Leu	His	Tyr	Ile	
			125					130					135			
cgc	aag	tac	aac	cgc	ttc	gag	aag	cgc	cac	aag	aac	atg	tct	gta	cac	725
Arg	Lys	Tyr	Asn	Arg	Phe	Glu	Lys	Arg	His	Lys	Asn	Met	Ser	Val	His	
		140					145					150				
ctg	tcc	ccc	tgc	ttc	agg	gac	gtc	cag	atc	ggc	gac	atc	gtc	aca	gtg	773
Leu	Ser	Pro	Cys	Phe	Arg	Asp	Val	Gln	Ile	Gly	Asp	Ile	Val	Thr	Val	
	155					160					165					
ggc	gag	tgc	cgg	cct	ctg	agc	aag	aca	gtg	cgc	ttc	aac	gtg	ctc	aag	821
Gly	Glu	Cys	Arg	Pro	Leu	Ser	Lys	Thr	Val	Arg	Phe	Asn	Val	Leu	Lys	
170					175					180					185	
gtc	acc	aag	gct	gcc	ggc	acc	aag	aag	cag	ttc	cag	aag	ttc	tga	ggc	869
Val	Thr	Lys	Ala	Ala	Gly	Thr	Lys	Lys	Gln	Phe	Gln	Lys	Phe	*		
			190					195					200			
tgacatcgg	cccgcctcccc	acaatgaaat	aaagttat	ttt	tctcattccc	aaaaaaaaa										929
aaaa																933

<210> 75
 <211> 3093
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (446)..(2956)

<400> 75

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ggcgctgctg ggggccccgag tgggtgctgg ggaaaagcgc accaagttct ctgccacaaa    120
cgtgctccac ctctggccct tcaccatcca cgacctgcgg gcactcgggtg ctaagaagtt    180
ctacggggcgc ttctgcaccg gcaccctgga ccacatcagc atcaggcagc tccagctgct    240
tctgctgaag gtagcattgc tgctgggggt ggaaattcac tgggggtgtca ctttctactgg    300
cctccagccc cctcctagga aggggagtggt ctggcggtgcc cagctccaac ccaaccccc    360
tgcccagctg gccaaactatg aatttgacgt ctttatctcg gctgcaggag gtaaattcgt    420
ccctgaaggc ttcaaagtgc gagaa  atg cga ggc aaa ctg gcc att ggc atc      472
                               Met Arg Gly Lys Leu Ala Ile Gly Ile
                               1                               5

aca gcc aac ttt gtg aat gga cgc acc gtg gag gag aca cag gtg ccg      520
Thr Ala Asn Phe Val Asn Gly Arg Thr Val Glu Glu Thr Gln Val Pro
 10                               15                               20                               25

gag atc agt ggt gta gcc agg atc tac aac cag agc ttc ttc cag agc      568
Glu Ile Ser Gly Val Ala Arg Ile Tyr Asn Gln Ser Phe Phe Gln Ser
                               30                               35                               40

ctt ctc aaa gcc aca ggc att gat ctg gag aac att gtg tac tac aag      616
Leu Leu Lys Ala Thr Gly Ile Asp Leu Glu Asn Ile Val Tyr Tyr Lys
                               45                               50                               55

gac gac acc cac tac ttt gtg atg aca gcc aag aag cag tgc ctg ctg      664
Asp Asp Thr His Tyr Phe Val Met Thr Ala Lys Lys Gln Cys Leu Leu
                               60                               65                               70

cgg ctg ggg gtg ctg cgc cag gac tgg cca gac acc aat cgg ctg ctg      712
Arg Leu Gly Val Leu Arg Gln Asp Trp Pro Asp Thr Asn Arg Leu Leu
                               75                               80                               85

ggc agt gcc aat gtg gtg ccc gag gct ctg cag cgc ttt acc cgg gca      760
Gly Ser Ala Asn Val Val Pro Glu Ala Leu Gln Arg Phe Thr Arg Ala
 90                               95                               100                               105

gct gct gac ttt gcc acc cat ggc aag ctc ggg aaa cta gag ttt gcc      808
Ala Ala Asp Phe Ala Thr His Gly Lys Leu Gly Lys Leu Glu Phe Ala
                               110                               115                               120
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Glu Asn Glu Leu Gly Ile Thr Pro Val Val Ser Ala Gln Ala Val Val	
350 355 360	
gca ggg agt gac cca ctg ggc ctc att gcc tac ctc agc cac ttc cac	1576
Ala Gly Ser Asp Pro Leu Gly Leu Ile Ala Tyr Leu Ser His Phe His	
365 370 375	
agt gcc ttc aag agc atg gcc cac agc cca ggc cct gtc agc cag gcc	1624
Ser Ala Phe Lys Ser Met Ala His Ser Pro Gly Pro Val Ser Gln Ala	
380 385 390	
tcc cca ggg acc tcc agt gct gta tta ttc ctt agt aaa ctt cag agg	1672
Ser Pro Gly Thr Ser Ser Ala Val Leu Phe Leu Ser Lys Leu Gln Arg	
395 400 405	
acc ctg cag cga tcc cgg gcc aag gaa aat gca gag gat gct ggt ggc	1720
Thr Leu Gln Arg Ser Arg Ala Lys Glu Asn Ala Glu Asp Ala Gly Gly	
410 415 420 425	
aag aag ctg cgc ttg gag atg gag gcc gag acc cca agt act gag gtg	1768
Lys Lys Leu Arg Leu Glu Met Glu Ala Glu Thr Pro Ser Thr Glu Val	
430 435 440	
cca cct gac cca gag cct ggt gta ccc ctg aca ccc cca tcc caa cac	1816
Pro Pro Asp Pro Glu Pro Gly Val Pro Leu Thr Pro Pro Ser Gln His	
445 450 455	
cag gag gcc ggt gct ggg gac ctg tgt gca ctt tgt ggg gaa cac ctc	1864
Gln Glu Ala Gly Ala Gly Asp Leu Cys Ala Leu Cys Gly Glu His Leu	
460 465 470	
tat gtc ctg gaa cgc ctc tgt gtc aac ggc cat ttc ttc cac cgg agc	1912
Tyr Val Leu Glu Arg Leu Cys Val Asn Gly His Phe Phe His Arg Ser	
475 480 485	
tgc ttc cgc tgc cat acc tgt gag gcc aca ctg tgg cca ggt ggc tac	1960
Cys Phe Arg Cys His Thr Cys Glu Ala Thr Leu Trp Pro Gly Gly Tyr	
490 495 500 505	
gag cag cac cca gga gat gga cat tcc tac tgc ctc cag cac ctg ccc	2008
Glu Gln His Pro Gly Asp Gly His Ser Tyr Cys Leu Gln His Leu Pro	
510 515 520	
cag aca gac cac aaa gag gaa ggc agc gat aga ggc cct gag agt ccg	2056
Gln Thr Asp His Lys Glu Glu Gly Ser Asp Arg Gly Pro Glu Ser Pro	
525 530 535	
gag ctc ccc aca cca agt gag aat agc atg cca cca ggc ctc tca act	2104
Glu Leu Pro Thr Pro Ser Glu Asn Ser Met Pro Pro Gly Leu Ser Thr	
540 545 550	
ccc aca gcc tcg cag gag ggg gcc ggt cct gtt cca gat ccc agc cag	2152
Pro Thr Ala Ser Gln Glu Gly Ala Gly Pro Val Pro Asp Pro Ser Gln	
555 560 565	
ccc acc cgt cgg cag atc cgc ctc tcc agc ccg gag cgc cag cgg ttg	2200
Pro Thr Arg Arg Gln Ile Arg Leu Ser Ser Pro Glu Arg Gln Arg Leu	

570		575		580		585	
tcc tcc ctt aac ctt acc cct gac ccg gaa atg gag cct cca ccc aag							2248
Ser Ser Leu Asn Leu Thr Pro Asp Pro Glu Met Glu Pro Pro Pro Lys							
		590		595		600	
cct ccc cgc agc tgc tcc gcc ttg gcc cgc cac gcc ctg gag agc agc							2296
Pro Pro Arg Ser Cys Ser Ala Leu Ala Arg His Ala Leu Glu Ser Ser							
		605		610		615	
ttt gtg ggc tgg ggc ctg cca gtc cag agc cct caa gct ctt gtg gcc							2344
Phe Val Gly Trp Gly Leu Pro Val Gln Ser Pro Gln Ala Leu Val Ala							
		620		625		630	
atg gag aag gag gaa aaa gag agt ccc ttc tcc agt gaa gag gaa gaa							2392
Met Glu Lys Glu Glu Lys Glu Ser Pro Phe Ser Ser Glu Glu Glu Glu							
		635		640		645	
gaa gat gtg cct ttg gac tca gat gtg gaa cag gcc ctg cag acc ttt							2440
Glu Asp Val Pro Leu Asp Ser Asp Val Glu Gln Ala Leu Gln Thr Phe							
		650		655		660	665
gcc aag acc tca ggc acc atg aat aac tac cca aca tgg cgt cgg act							2488
Ala Lys Thr Ser Gly Thr Met Asn Asn Tyr Pro Thr Trp Arg Arg Thr							
		670		675		680	
ctg ctg cgc cgt gcg aag gag gag gag atg aag agg ttc tgc aag gcc							2536
Leu Leu Arg Arg Ala Lys Glu Glu Glu Met Lys Arg Phe Cys Lys Ala							
		685		690		695	
cag acc atc caa cgg cga cta aat gag att gag gct gcc ttg agg gag							2584
Gln Thr Ile Gln Arg Arg Leu Asn Glu Ile Glu Ala Ala Leu Arg Glu							
		700		705		710	
cta gag gcc gag ggc gtg aag ctg gag ctg gcc ttg agg cgc cag agc							2632
Leu Glu Ala Glu Gly Val Lys Leu Glu Leu Ala Leu Arg Arg Gln Ser							
		715		720		725	
agt tcc cca gaa cag caa aag aaa cta tgg gta gga cag ctg cta cag							2680
Ser Ser Pro Glu Gln Lys Lys Leu Trp Val Gly Gln Leu Leu Gln							
		730		735		740	745
ctc gtt gac aag aaa aac agc ctg gtg gct gag gag gcc gag ctc atg							2728
Leu Val Asp Lys Lys Asn Ser Leu Val Ala Glu Glu Ala Glu Leu Met							
		750		755		760	
atc acg gtg cag gaa ttg aat ctg gag gag aaa cag tgg cag ctg gac							2776
Ile Thr Val Gln Glu Leu Asn Leu Glu Glu Lys Gln Trp Gln Leu Asp							
		765		770		775	
cag gag cta cga ggc tac atg aac cgg gaa gaa aac cta aag aca gct							2824
Gln Glu Leu Arg Gly Tyr Met Asn Arg Glu Glu Asn Leu Lys Thr Ala							
		780		785		790	
gct gat cgg cag gct gag gac cag gtc ctg agg aag ctg gtg gat ttg							2872
Ala Asp Arg Gln Ala Glu Asp Gln Val Leu Arg Lys Leu Val Asp Leu							
		795		800		805	

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gtc aac cag aga gat gcc ctc atc cgc ttc cag gag gag cgc agg ctc      2920
Val Asn Gln Arg Asp Ala Leu Ile Arg Phe Gln Glu Glu Arg Arg Leu
810                               815                               820                               825

agc gag ctg gcc ttg ggg aca ggg gcc cag ggc tag acga ggggtgggccg      2970
Ser Glu Leu Ala Leu Gly Thr Gly Ala Gln Gly *
                               830                               835

tctgcttttcg ttcccacaaa gaaagcacct caccacagca cagtgccacc cctgttcac      3030

tggtgctgcct ggcagagagc cttgctgttt acaattaaaa tgtttctgcc aaaaaaaaaa      3090

aaa                                                                    3093

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<210> 76
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<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (179)..(961)

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<400> 76
gctggagaac aactatctat tcgatgatga agatacccca ccaaacccaa aaaaagagat      60

ctctcgagga tccgaattcg cggccgcgtc gacgtgggct tgtgggtctt tgagaccga      120

aaattgagag cgttttcgca ctccagcggc tgctcctggc ggctctgcgg ccgtcacc      178
atg cca cag aat gaa tat att gaa tta cac cgt aaa cgc tat gga tac      226
Met Pro Gln Asn Glu Tyr Ile Glu Leu His Arg Lys Arg Tyr Gly Tyr
1                               5                               10                               15

cgt ttg gat tac cat gag aaa aag aga aag aag gaa agt cga gag gct      274
Arg Leu Asp Tyr His Glu Lys Lys Arg Lys Lys Glu Ser Arg Glu Ala
20                               25                               30

cat gaa cgt tca aag aag gca aag aaa atg att ggt ctg aag gct aag      322
His Glu Arg Ser Lys Lys Ala Lys Lys Met Ile Gly Leu Lys Ala Lys
35                               40                               45

ctt tac cat aaa cag cgt cat gct gag aaa ata caa atg aaa aag act      370
Leu Tyr His Lys Gln Arg His Ala Glu Lys Ile Gln Met Lys Lys Thr
50                               55                               60

atc aag atg cat gaa aag aga aac acc aaa caa aag aat gat gaa aag      418
Ile Lys Met His Glu Lys Arg Asn Thr Lys Gln Lys Asn Asp Glu Lys
65                               70                               75                               80

aca cca cag gga gca gta cct gcc tat ctg ctg gac aga gag gga caa      466
Thr Pro Gln Gly Ala Val Pro Ala Tyr Leu Leu Asp Arg Glu Gly Gln
85                               90                               95

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tct cga gct aaa gta ctt tcc aat atg att aaa cag aaa aga aaa gag	514
Ser Arg Ala Lys Val Leu Ser Asn Met Ile Lys Gln Lys Arg Lys Glu	
100 105 110	
aag gcg gga aaa tgg gaa gtc cct ctg cct aaa gta cgt gcc cag gga	562
Lys Ala Gly Lys Trp Glu Val Pro Leu Pro Lys Val Arg Ala Gln Gly	
115 120 125	
gaa aca gaa gta tta aaa gtt att cga aca gga aag aga aag aag aag	610
Glu Thr Glu Val Leu Lys Val Ile Arg Thr Gly Lys Arg Lys Lys Lys	
130 135 140	
gca tgg aag aga atg gtt act aaa gtg tgc ttt gtt gga gat ggc ttt	658
Ala Trp Lys Arg Met Val Thr Lys Val Cys Phe Val Gly Asp Gly Phe	
145 150 155 160	
aca aga aaa cca cct aaa tat gaa aga ttc atc agg cca atg ggc ttg	706
Thr Arg Lys Pro Pro Lys Tyr Glu Arg Phe Ile Arg Pro Met Gly Leu	
165 170 175	
cgt ttc aag aaa gcc cat gta aca cat cct gaa ctg aaa gcc acc ttt	754
Arg Phe Lys Lys Ala His Val Thr His Pro Glu Leu Lys Ala Thr Phe	
180 185 190	
tgc cta cca ata ctt ggt gta aag aag aat ccc tca tcc cca ctg tat	802
Cys Leu Pro Ile Leu Gly Val Lys Lys Asn Pro Ser Ser Pro Leu Tyr	
195 200 205	
aca act ttg ggt gtt att acc aaa ggt act gtc att gaa gta aat gtg	850
Thr Thr Leu Gly Val Ile Thr Lys Gly Thr Val Ile Glu Val Asn Val	
210 215 220	
agc gaa ttg ggc ctt gtg aca caa gga ggc aaa gtt att tgg gga aaa	898
Ser Glu Leu Gly Leu Val Thr Gln Gly Gly Lys Val Ile Trp Gly Lys	
225 230 235 240	
tat gcc cag gtt acc aac aat cct gaa aat gat gga tgt ata aat gca	946
Tyr Ala Gln Val Thr Asn Asn Pro Glu Asn Asp Gly Cys Ile Asn Ala	
245 250 255	
gtc tta ctg gtt tga cagcaatttc atatataatt attgaggact acacaccaat	1001
Val Leu Leu Val *	
260	
tgaagaaact gccattactg tgatgtttct gaatactacc aaacagccat acatgtctgc	1061
aatgaagaga tttattaaat tgtaaacatt aaagtggaaa aaaaaaaaaa	1110

<210> 77
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<400> 77

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	Met Met Gln Gly Glu Ala His Pro	
	1 5	
agt gct tcc ctt att gac aga acc atc aag atg aga aaa gaa aca gag	100	
Ser Ala Ser Leu Ile Asp Arg Thr Ile Lys Met Arg Lys Glu Thr Glu		
10 15 20		
gct agg aaa gtg gtc tta gcc tgg gga ctc cta aat gta tct atg gct	148	
Ala Arg Lys Val Val Leu Ala Trp Gly Leu Leu Asn Val Ser Met Ala		
25 30 35 40		
gga atg ata tat act gaa atg act gga aaa ttg att agt tca tac tac	196	
Gly Met Ile Tyr Thr Glu Met Thr Gly Lys Leu Ile Ser Ser Tyr Tyr		
45 50 55		
aat gtg aca tac tgg ccc ctc tgg tat att gag ctt gcc ctt gca tct	244	
Asn Val Thr Tyr Trp Pro Leu Trp Tyr Ile Glu Leu Ala Leu Ala Ser		
60 65 70		
ctc ttc agc ctt aat gcc tta ttt gat ttt tgg aga tat ttc aaa tat	292	
Leu Phe Ser Leu Asn Ala Leu Phe Asp Phe Trp Arg Tyr Phe Lys Tyr		
75 80 85		
act gtg gca cca aca agt ctg gtt gtt agt cct gga cag caa aca ctt	340	
Thr Val Ala Pro Thr Ser Leu Val Val Ser Pro Gly Gln Gln Thr Leu		
90 95 100		
tta ggg ttg aaa aca gct gtt gta cag act acg cct cca cat gat ctg	388	
Leu Gly Leu Lys Thr Ala Val Val Gln Thr Thr Pro Pro His Asp Leu		
105 110 115 120		
gca gca acc caa atc cct ccc gct cca cct tcc cct tca att cag ggt	436	
Ala Ala Thr Gln Ile Pro Pro Ala Pro Pro Ser Pro Ser Ile Gln Gly		
125 130 135		
cag agt gtg ttg agt tat agc cct tct cgt tcg ccc agt acc agt ccc	484	
Gln Ser Val Leu Ser Tyr Ser Pro Ser Arg Ser Pro Ser Thr Ser Pro		
140 145 150		
aag ttc acc acc agc tgt atg act ggt tac agc cct cag ctg caa ggt	532	
Lys Phe Thr Thr Ser Cys Met Thr Gly Tyr Ser Pro Gln Leu Gln Gly		
155 160 165		
ctg tcc tca ggt ggc agt ggt tct tat agc cct gga gtg acc tac tcg	580	
Leu Ser Ser Gly Gly Ser Gly Ser Tyr Ser Pro Gly Val Thr Tyr Ser		
170 175 180		
ccc gtc agt ggt tat aat aag ttg gcg agc ttt agc ccc tct cct cct	628	
Pro Val Ser Gly Tyr Asn Lys Leu Ala Ser Phe Ser Pro Ser Pro Pro		
185 190 195 200		
tct ccg tac cct acc act gtt gga cca gtg gag agc agt gga ttg aga	676	

Ser	Pro	Tyr	Pro	Thr	Val	Gly	Pro	Val	Glu	Ser	Ser	Gly	Leu	Arg		
				205					210					215		
tct	cgc	tac	cgt	tct	tca	cct	acc	gtc	tac	aac	tca	cct	act	gac	aaa	724
Ser	Arg	Tyr	Arg	Ser	Ser	Pro	Thr	Val	Tyr	Asn	Ser	Pro	Thr	Asp	Lys	
				220					225					230		
gaa	gac	tac	atg	acc	gac	cta	cga	act	ttg	gat	act	ttt	ctc	aga	agt	772
Glu	Asp	Tyr	Met	Thr	Asp	Leu	Arg	Thr	Leu	Asp	Thr	Phe	Leu	Arg	Ser	
				235					240					245		
gaa	gag	gag	aaa	cag	cat	agg	gtt	aag	ctg	ggg	agc	cca	gat	tct	acc	820
Glu	Glu	Glu	Lys	Gln	His	Arg	Val	Lys	Leu	Gly	Ser	Pro	Asp	Ser	Thr	
				250					255					260		
tct	cct	tcc	agc	agt	cct	act	ttc	tgg	aac	tat	agt	cgt	tct	atg	ggg	868
Ser	Pro	Ser	Ser	Ser	Pro	Thr	Phe	Trp	Asn	Tyr	Ser	Arg	Ser	Met	Gly	
				265					270					275		
gat	tat	gca	caa	act	tta	aag	aag	ttt	cag	tat	cag	ctt	gcc	tgt	agg	916
Asp	Tyr	Ala	Gln	Thr	Leu	Lys	Lys	Phe	Gln	Tyr	Gln	Leu	Ala	Cys	Arg	
				285					290					295		
tct	cag	gcc	cca	tgt	gct	aac	aaa	gat	gaa	gcc	gat	ctc	agc	tct	aaa	964
Ser	Gln	Ala	Pro	Cys	Ala	Asn	Lys	Asp	Glu	Ala	Asp	Leu	Ser	Ser	Lys	
				300					305					310		
caa	gcc	gca	gaa	gag	gtc	tgg	gca	aga	gtg	gct	atg	aat	aga	caa	ctt	1012
Gln	Ala	Ala	Glu	Glu	Val	Trp	Ala	Arg	Val	Ala	Met	Asn	Arg	Gln	Leu	
				315					320					325		
ctt	gat	cat	atg	gat	tca	tgg	aca	gct	aaa	ttt	aga	aat	tgg	atc	aat	1060
Leu	Asp	His	Met	Asp	Ser	Trp	Thr	Ala	Lys	Phe	Arg	Asn	Trp	Ile	Asn	
				330					335					340		
gag	aca	ata	tta	gtg	cca	ctt	gtt	caa	gag	att	gag	tct	gtc	agc	aca	1108
Glu	Thr	Ile	Leu	Val	Pro	Leu	Val	Gln	Glu	Ile	Glu	Ser	Val	Ser	Thr	
				345					350					355		
cag	atg	aga	cga	atg	ggg	tgt	cca	gag	cta	cag	ata	gga	gag	gct	agt	1156
Gln	Met	Arg	Arg	Met	Gly	Cys	Pro	Glu	Leu	Gln	Ile	Gly	Glu	Ala	Ser	
				365					370					375		
att	act	agc	ttg	aaa	caa	gct	gcc	ctg	gtt	aaa	gcg	cct	ctc	att	ccg	1204
Ile	Thr	Ser	Leu	Lys	Gln	Ala	Ala	Leu	Val	Lys	Ala	Pro	Leu	Ile	Pro	
				380					385					390		
act	ttg	aac	aca	atc	gtt	cag	tat	cta	gac	ctt	act	cca	aat	cag	gaa	1252
Thr	Leu	Asn	Thr	Ile	Val	Gln	Tyr	Leu	Asp	Leu	Thr	Pro	Asn	Gln	Glu	
				395					400					405		
tac	ttg	ttt	gaa	agg	atc	aaa	gaa	cta	tct	cag	gga	ggg	tgt	atg	agc	1300
Tyr	Leu	Phe	Glu	Arg	Ile	Lys	Glu	Leu	Ser	Gln	Gly	Gly	Cys	Met	Ser	
				410					415					420		
tca	ttt	cga	tgg	aac	aga	ggg	ggc	gac	ttc	aaa	gga	cga	aag	tgg	gat	1348
Ser	Phe	Arg	Trp	Asn	Arg	Gly	Gly	Asp	Phe	Lys	Gly	Arg	Lys	Trp	Asp	

425	430	435	440	
aca gac ctg ccc acc gat tct gct atc atc atg cat gta ttt tgc acc				1396
Thr Asp Leu Pro Thr Asp Ser Ala Ile Ile Met His Val Phe Cys Thr				
	445	450	455	
tac ctt gat tcc aga tta cct cca cat ccg aag tat ccc gac gga aaa				1444
Tyr Leu Asp Ser Arg Leu Pro Pro His Pro Lys Tyr Pro Asp Gly Lys				
	460	465	470	
act ttt act tct cag cac ttt gtt cag aca cca aat aaa cca gat gtt				1492
Thr Phe Thr Ser Gln His Phe Val Gln Thr Pro Asn Lys Pro Asp Val				
	475	480	485	
aca aat gag aat gtt ttt tgc att tat cag agt gct atc aac cct ccc				1540
Thr Asn Glu Asn Val Phe Cys Ile Tyr Gln Ser Ala Ile Asn Pro Pro				
	490	495	500	
cat tat gag ctc atc tac cag cgt cat gta tac aac ctg cca aag ggc				1588
His Tyr Glu Leu Ile Tyr Gln Arg His Val Tyr Asn Leu Pro Lys Gly				
	505	510	515	520
aga aat aat atg ttt cat aca ttg ttg atg ttt ctc tac atc ata aag				1636
Arg Asn Asn Met Phe His Thr Leu Leu Met Phe Leu Tyr Ile Ile Lys				
	525	530	535	
acc aaa gag tca gga atg ctt ggg aga gtt aat ctt ggt cta tct ggt				1684
Thr Lys Glu Ser Gly Met Leu Gly Arg Val Asn Leu Gly Leu Ser Gly				
	540	545	550	
gtg aat ata ttg tgg atc ttt ggc gag tag c aagtcataata tttaattctg				1735
Val Asn Ile Leu Trp Ile Phe Gly Glu *				
	555	560		
acatttagac tatttcactg aaccagaagt cgaaactaaa catctctgag ccactgactc				1795
ttctgaaata aaatacacat ggggtgtaaaaa aaaaaaaaaa				1835

<210> 78
 <211> 1029
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (428)..(817)

<400> 78	
ccctgattat aactggatat tgggtagcat ccagttaaag tatcagtaga gcttggatgt	60
atcaaagaaa atatttttatt caagttccca aaacaaactt gaggagttat gctgggtttg	120
aattgaagaa aaaaggccaa gttaaaatag gaaaacaaat gggttttcatt tgggtggcagt	180

<220>
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 <222> (188)..(5149)

<400> 79

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ggccccctgct cggataaagg tgggagggtc aggtgtcaat gtcaatgcaa agggcttgga      60

cttgggtggc agaggagggg tccaagttcc agcagtggac atttcatctt ctcttggggg      120

tagggcagta gaggtacagg gcccatctct ggagagtggg gatcatggca aaattaaatt      180

tcccacc  atg aaa gtg ccg aaa ttt ggt gtc tca aca ggg cgt gag ggc      229
      Met Lys Val Pro Lys Phe Gly Val Ser Thr Gly Arg Glu Gly
            1             5             10

cag aca cca aag gca ggg ctg agg gtt tct gca cct gaa gtc tct gtg      277
Gln Thr Pro Lys Ala Gly Leu Arg Val Ser Ala Pro Glu Val Ser Val
      15             20             25             30

ggg cac aag ggc ggc aag cca ggc ttg act atc caa gcc cct cag ctg      325
Gly His Lys Gly Gly Lys Pro Gly Leu Thr Ile Gln Ala Pro Gln Leu
            35             40             45

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Glu Val Ser Val Pro Ser Ala Asn Ile Glu Gly Leu Glu Gly Lys Leu
            50             55             60

aag ggc ccc caa atc act ggg cca tca ctt gag ggt gac cta ggc ctg      421
Lys Gly Pro Gln Ile Thr Gly Pro Ser Leu Glu Gly Asp Leu Gly Leu
            65             70             75

aaa ggt gcc aag cca cag ggg cac att ggg gtg gat gcc tct gct ccc      469
Lys Gly Ala Lys Pro Gln Gly His Ile Gly Val Asp Ala Ser Ala Pro
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caa att ggg ggt agc atc act ggc ccc agt gtg gaa gtt cag gcc cct      517
Gln Ile Gly Gly Ser Ile Thr Gly Pro Ser Val Glu Val Gln Ala Pro
            95             100             105             110

gac att gat gtt cag ggg cct ggg agc aaa ctg aat gtg ccc aag atg      565
Asp Ile Asp Val Gln Gly Pro Gly Ser Lys Leu Asn Val Pro Lys Met
            115             120             125

aaa gtc ccc aag ttc tct gta tca ggt gca aag gga gag gaa act ggg      613
Lys Val Pro Lys Phe Ser Val Ser Gly Ala Lys Gly Glu Glu Thr Gly
            130             135             140

att gat gtg aca ctg cct aca ggt gaa gtg act gtt cct ggg gtc tct      661
Ile Asp Val Thr Leu Pro Thr Gly Glu Val Thr Val Pro Gly Val Ser
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Gly Asp Val Ser Leu Pro Glu Ile Ala Thr Gly Gly Leu Glu Gly Lys
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atg aaa ggt act aaa gtg aag act cct gaa atg att att cag aaa cct      757

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tcc atg cct gat gtg gac ttg cat atg aaa ggt cct aaa gta aag gga Ser Met Pro Asp Val Asp Leu His Met Lys Gly Pro Lys Val Lys Gly 640 645 650	2149
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aaa gta gat gtc agt gcc cca gat gtt gaa atg cag ggt cct gac tgg Lys Val Asp Val Ser Ala Pro Asp Val Glu Met Gln Gly Pro Asp Trp 675 680 685	2245
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ctt gaa gga cct gaa ggg aag ttg aaa ggc ccg aag ttt aag atg cct Leu Glu Gly Pro Glu Gly Lys Leu Lys Gly Pro Lys Phe Lys Met Pro 735 740 745 750	2437
gag atg cac ttc aga gct cct aag atg cct ttg cca gat gtt gac ctg Glu Met His Phe Arg Ala Pro Lys Met Pro Leu Pro Asp Val Asp Leu 755 760 765	2485
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Pro Lys Ile Ser Met Pro Asp Val Asp Leu His Leu Lys Gly Pro Lys			
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Val Lys Gly Asp Met Asp Val Ser Val Pro Lys Val Glu Gly Glu Met			
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Lys Val Pro Asp Val Asp Ile Lys Gly Pro Lys Val Asp Ile Asp Ala			
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Pro Asp Val Glu Val His Asp Pro Asp Trp His Leu Lys Met Pro Lys			
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Ser Val Asp Thr Asp Ala Pro Asp Leu Asp Ile Glu Gly Pro Glu Gly			
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Lys Leu Lys Gly Ser Lys Phe Lys Met Pro Lys Leu Asn Ile Lys Ala			
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Leu Lys Gly Glu Ile Asp Ala Ser Val Pro Glu Leu Glu Gly Asp Leu			
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Arg Gly Pro Gln Val Asp Val Lys Gly Pro Leu Val Glu Ala Glu Val			
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Leu Lys Met Pro Glu Met His Phe Lys Ala Pro Lys Ile Ser Met Pro			
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Thr Leu Leu Leu Ala Leu Ala Leu Gly Leu Ala Gln Pro Ala Ser Ala	
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cgc cgg aag ctg ctg gtg ttt ctg ctg gat ggt ttt cgc tca gac tac	208
Arg Arg Lys Leu Leu Val Phe Leu Leu Asp Gly Phe Arg Ser Asp Tyr	
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Ile Ser Asp Glu Ala Leu Glu Ser Leu Pro Gly Phe Lys Glu Ile Val	
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Ser Arg Gly Val Lys Val Asp Tyr Leu Thr Pro Asp Phe Pro Ser Leu	
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Ser Tyr Pro Asn Tyr Tyr Thr Leu Met Thr Gly Arg His Cys Glu Val	
75 80 85	
cat cag atg atc ggg aac tac atg tgg gac ccc acc acc aac aag tcc	400
His Gln Met Ile Gly Asn Tyr Met Trp Asp Pro Thr Thr Asn Lys Ser	
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Phe Asp Ile Gly Val Asn Lys Asp Ser Leu Met Pro Leu Trp Trp Asn	
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Tyr Met Tyr Tyr Trp Pro Gly Cys Glu Val Glu Ile Leu Gly Val Arg	
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Asp Leu Ala Ala Ile Tyr His Glu Arg Ile Asp Val Glu Gly His His	
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Ala Pro Gly Lys His Ser Glu Ile Tyr Asn Lys Leu Ser Thr Val Glu	
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Lys Lys Gly Lys Phe Val Ser Pro Leu Thr Leu Val Ala Asp Glu Gly	
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360 365 370	
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Thr Ser Phe Ala Gly Phe Leu Ser Asn Ala Ser Trp Val Trp Gln Met	
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 Met Glu Gly Asp Cys Leu Ser Cys Met Lys Tyr Leu
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 Met Phe Val Phe Asn Phe Phe Ile Phe Leu Gly Gly Ala Cys Leu Leu
 15 20 25
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 Ala Ile Gly Ile Trp Val Met Val Asp Pro Thr Gly Phe Arg Glu Ile
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 Val Arg Glu Asn Lys Cys Leu Leu Leu Phe Phe Phe Leu Phe Ile Leu
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 Ile Ile Phe Leu Ala Glu Leu Ser Ala Ala Ile Leu Ala Phe Ile Phe
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 Arg Glu Asn Leu Thr Arg Glu Phe Phe Thr Lys Glu Leu Thr Lys His
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240 245

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tcagtgttaa gtgaagatca cattttatat gcgatcttga cttttttgtc ttacattata	240
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Met Val Leu Gly Lys Val Lys Ser Leu	
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aca ata agc ttt gac tgt ctt aat gac agc aat gtc cct gtg tat tct	338
Thr Ile Ser Phe Asp Cys Leu Asn Asp Ser Asn Val Pro Val Tyr Ser	
10 15 20 25	
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Ser Gly Asp Thr Val Ser Gly Arg Val Asn Leu Glu Val Thr Gly Glu	
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atc aga gta aaa tct ctt aaa att cat gca aga gga cat gcg aaa gta	434
Ile Arg Val Lys Ser Leu Lys Ile His Ala Arg Gly His Ala Lys Val	
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cgc tgg act gaa tct aga aac gcc ggc tcc aat act gcc tat aca cag	482
Arg Trp Thr Glu Ser Arg Asn Ala Gly Ser Asn Thr Ala Tyr Thr Gln	
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Asn Tyr Thr Glu Glu Val Glu Tyr Phe Asn His Lys Asp Ile Leu Ile	
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Gly His Glu Arg Asp Asp Asp Asn Ser Glu Glu Gly Phe His Thr Ile	
90 95 100 105	
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His Ser Gly Arg His Glu Tyr Ala Phe Ser Phe Glu Leu Pro Gln Thr	
110 115 120	
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Pro Leu Ala Thr Ser Phe Glu Gly Arg His Gly Ser Val Arg Tyr Trp	
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Val Lys Ala Glu Leu His Arg Pro Trp Leu Leu Pro Val Lys Leu Lys	
140 145 150	
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Lys Glu Phe Thr Val Phe Glu His Ile Asp Ile Asn Thr Pro Ser Leu	
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Leu Ser Pro Gln Ala Gly Thr Lys Glu Lys Thr Leu Cys Cys Trp Phe	
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Cys Thr Ser Gly Pro Ile Ser Leu Ser Ala Lys Ile Glu Arg Lys Gly	

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Tyr Thr Pro Gly Glu Ser Ile Gln Ile Phe Ala Glu Ile Glu Asn Cys				
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tct tcc cga atg gtg gtg cca aag gca gcc att tac caa aca cag gcc				962
Ser Ser Arg Met Val Val Pro Lys Ala Ala Ile Tyr Gln Thr Gln Ala				
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Phe Tyr Ala Lys Gly Lys Met Lys Glu Val Lys Gln Leu Val Ala Asn				
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Leu Arg Gly Glu Ser Leu Ser Ser Gly Lys Thr Glu Thr Trp Asn Gly				
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Lys Leu Leu Lys Ile Pro Pro Val Ser Pro Ser Ile Leu Asp Cys Ser				
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Ile Ile Arg Val Glu Tyr Ser Leu Met Val Tyr Val Asp Ile Pro Gly				
	285	290	295	
gct atg gat tta ttt ctt aat ttg cca ctt gtc atc ggt acc att cct				1202
Ala Met Asp Leu Phe Leu Asn Leu Pro Leu Val Ile Gly Thr Ile Pro				
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cta cat cca ttt ggt agc aga acc tca agt gta agc agt cag tgt agc				1250
Leu His Pro Phe Gly Ser Arg Thr Ser Ser Val Ser Ser Gln Cys Ser				
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Met Asn Met Asn Trp Leu Ser Leu Ser Leu Pro Glu Arg Pro Glu Ala				
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Pro Pro Ser Tyr Ala Glu Val Val Thr Glu Glu Gln Arg Arg Asn Asn				
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Leu Ala Pro Val Ser Ala Cys Asp Asp Phe Glu Arg Ala Leu Gln Gly				
	365	370	375	
cca ctg ttt gca tat atc cag gag ttt cga ttc ttg cct cca cct ctt				1442
Pro Leu Phe Ala Tyr Ile Gln Glu Phe Arg Phe Leu Pro Pro Pro Leu				
	380	385	390	
tat tca gag att gat cca aat cct gat cag tca gca gat gat aga cca				1490
Tyr Ser Glu Ile Asp Pro Asn Pro Asp Gln Ser Ala Asp Asp Arg Pro				
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tcc tgc ccc tct cgt tga aggaac acttggttga atcaagttga tgtgggttcc				1544
Ser Cys Pro Ser Arg *				
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 ttattcaggt tctaaccctt tgctgtacac aagcagacag aaatgcatct gttacataaa 480
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 Met Leu Phe Lys Ser Phe Lys Asn
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 act cac cat ata aac ttg cat ttg agc ttg tgt gtt ctt ttg tta atg 580
 Thr His His Ile Asn Leu His Leu Ser Leu Cys Val Leu Leu Leu Met
 10 15 20
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 Cys Arg Val Leu Leu Ser Arg Asn Cys Gln Cys Val Leu Gly Leu Thr
 25 30 35 40
 caa gaa cag ttt ctt ctg gat tcc tta ttt gat tta ttt aac cta att 676
 Gln Glu Gln Phe Leu Leu Asp Ser Leu Phe Asp Leu Phe Asn Leu Ile
 45 50 55
 ata ttc taa tattgca aatattacca taagtgggta aaagtaaaat tcctcttctg 732

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Met Ile Tyr Lys
1

tgc ccc atg tgt agg gaa ttt ttc tct gag aga gca gat ctt ttt atg 644
Cys Pro Met Cys Arg Glu Phe Phe Ser Glu Arg Ala Asp Leu Phe Met
5 10 15 20

cat cag aaa att cac aca gct gag aag ccc cat aaa tgt gac aag tgt 692
His Gln Lys Ile His Thr Ala Glu Lys Pro His Lys Cys Asp Lys Cys
25 30 35

gat aag ggt ttc ttt cat ata tca gaa ctt cat att cat tgg aga gac 740
Asp Lys Gly Phe Phe His Ile Ser Glu Leu His Ile His Trp Arg Asp
40 45 50

cat aca gga gag aag gtc tat aaa tgt gat gat tgt ggt aag gat ttt 788
His Thr Gly Glu Lys Val Tyr Lys Cys Asp Asp Cys Gly Lys Asp Phe
55 60 65

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cat ctt caa att cat atg aga gtt cat aca ggt gag aaa ccg tat gtc His Leu Gln Ile His Met Arg Val His Thr Gly Glu Lys Pro Tyr Val 105 110 115	932
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ata taa aacgttttgc taagagttta aaatcttaaa acccataagt gccactagga Ile *	1420
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<210> 85
<211> 1685
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (66)..(1382)

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Asp	Lys	Asn	Thr	Leu	Lys	Asp	His	Met	Arg	Lys	Lys	Gln	His	Arg	Lys	
		225					230					235				
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Ile	Asn	Pro	Lys	Asn	Arg	Glu	Tyr	Asp	Arg	Phe	Tyr	Val	Ile	Asn	Tyr	
	240					245					250					
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Leu	Glu	Leu	Gly	Lys	Ser	Trp	Glu	Glu	Val	Gln	Leu	Glu	Asp	Asp	Arg	
255					260					265					270	
gag	ttg	ctg	gac	cat	cag	gaa	gat	gac	tgg	tct	gat	tgg	gaa	gaa	cac	923
Glu	Leu	Leu	Asp	His	Gln	Glu	Asp	Asp	Trp	Ser	Asp	Trp	Glu	Glu	His	
			275					280						285		
cct	gcc	tct	gca	gtc	tgc	tta	ttt	tgt	gaa	aag	caa	gca	gaa	aca	att	971
Pro	Ala	Ser	Ala	Val	Cys	Leu	Phe	Cys	Glu	Lys	Gln	Ala	Glu	Thr	Ile	
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Glu	Lys	Leu	Tyr	Val	His	Met	Glu	Asp	Ala	His	Glu	Phe	Asp	Leu	Leu	
		305					310					315				
aaa	ata	aag	tca	gaa	ctt	gga	tta	aat	ttc	tat	cag	caa	gtg	aaa	ctg	1067
Lys	Ile	Lys	Ser	Glu	Leu	Gly	Leu	Asn	Phe	Tyr	Gln	Gln	Val	Lys	Leu	
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gtc	aat	ttt	att	cgg	agg	caa	gtt	cac	caa	tgc	aga	tgt	tat	ggc	tgc	1115
Val	Asn	Phe	Ile	Arg	Arg	Gln	Val	His	Gln	Cys	Arg	Cys	Tyr	Gly	Cys	
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cat	gtg	aag	ttc	aaa	tcc	aaa	gca	gac	tta	aga	act	cac	atg	gaa	gaa	1163
His	Val	Lys	Phe	Lys	Ser	Lys	Ala	Asp	Leu	Arg	Thr	His	Met	Glu	Glu	
				355				360						365		
act	aaa	cac	act	tcg	ctg	ctc	ccc	gat	aga	aag	acg	tgg	gat	caa	ctg	1211
Thr	Lys	His	Thr	Ser	Leu	Leu	Pro	Asp	Arg	Lys	Thr	Trp	Asp	Gln	Leu	
			370					375					380			
gag	tat	tat	ttt	cca	acc	tat	gaa	aat	gac	act	ctc	ctg	tgt	aca	cta	1259
Glu	Tyr	Tyr	Phe	Pro	Thr	Tyr	Glu	Asn	Asp	Thr	Leu	Leu	Cys	Thr	Leu	
		385					390					395				
tct	gac	agt	gaa	agt	gac	ctg	aca	gct	cag	gaa	caa	aat	gaa	aat	gtt	1307
Ser	Asp	Ser	Glu	Ser	Asp	Leu	Thr	Ala	Gln	Glu	Gln	Asn	Glu	Asn	Val	
		400				405					410					
ccc	atc	atc	agt	gaa	gat	aca	tct	aaa	ctg	tat	gct	ttg	aaa	caa	agc	1355
Pro	Ile	Ile	Ser	Glu	Asp	Thr	Ser	Lys	Leu	Tyr	Ala	Leu	Lys	Gln	Ser	
415					420				425						430	
agt	att	ttg	aac	cag	ttg	cta	cta	taa	gagta	cttgaaaacc	tagaagaaac					1407
Ser	Ile	Leu	Asn	Gln	Leu	Leu	Leu	*								

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Leu His Ser Thr Glu Arg Ser Cys Leu Leu Lys Glu Leu His Arg Phe
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Glu Ser Ile Ala Ile Ala Gln Glu Lys Leu Glu Ala Pro Pro Pro Thr
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Pro Gly Gln Leu Arg Tyr Val Phe Ile His Asn Ala Ile Pro Phe Ile
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Gly Phe Gly Phe Leu Asp Asn Ala Ile Met Ile Val Ala Gly Thr His
65 70 75 80
att gaa atg tct att gga att att ttg gga att tca act atg gca gct 346
Ile Glu Met Ser Ile Gly Ile Ile Leu Gly Ile Ser Thr Met Ala Ala
85 90 95
gct gct ttg gga aat ctt gtg tca gat cta gct gga ctt gga ctt gca 394
Ala Ala Leu Gly Asn Leu Val Ser Asp Leu Ala Gly Leu Gly Leu Ala
100 105 110
ggc tac gtt gaa gca ttg gct tcc agg tta ggc ctg tca att cct gat 442
Gly Tyr Val Glu Ala Leu Ala Ser Arg Leu Gly Leu Ser Ile Pro Asp
115 120 125

ctc aca cca aag caa gtt gac atg tgg caa aca cgt ctt agt aca cat 490
 Leu Thr Pro Lys Gln Val Asp Met Trp Gln Thr Arg Leu Ser Thr His
 130 135 140

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 Leu Gly Lys Ala Val Gly Val Thr Ile Gly Cys Ile Leu Gly Met Phe
 145 150 155 160

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 Pro Leu Ile Phe Phe Gly Gly Gly Glu Glu Asp Glu Lys Leu Glu Thr
 165 170 175

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 Lys Ser *

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 Met Arg Phe Arg Val Ser Ser
 1 5

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Gly Leu Ser Gly Arg Gly Arg Gly Gly Ser Leu Ser Thr Arg Gly Arg	
10 15 20	
ggg agt gag gta cca gat tca gcc cat ttg gcc ccg acg cct ctg ttc	388
Gly Ser Glu Val Pro Asp Ser Ala His Leu Ala Pro Thr Pro Leu Phe	
25 30 35	
tcg gaa tcc ggg tgc tgc gga ttg agg tcc cgg ttc cta acg gac tgc	436
Ser Glu Ser Gly Cys Cys Gly Leu Arg Ser Arg Phe Leu Thr Asp Cys	
40 45 50 55	
aag atg gag gaa ggc ggg aac cta gga ggc ctg att aag atg gtc cat	484
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aaa aag att tct act tca tgt tcc gtc atc cct gaa aca tca aat tct Lys Lys Ile Ser Thr Ser Cys Ser Val Ile Pro Glu Thr Ser Asn Ser 415 420 425			1536
gat atg caa acc aaa aag gaa tat gta gtt tca ggt gaa cac aaa cag Asp Met Gln Thr Lys Lys Glu Tyr Val Val Ser Gly Glu His Lys Gln 430 435 440 445			1584
aaa ggc aaa gtt aaa aga aaa ttg aaa aat cag aat aaa aat aaa gag Lys Gly Lys Val Lys Arg Lys Leu Lys Asn Gln Asn Lys Asn Lys Glu 450 455 460			1632
aac caa gag cta aag caa gaa aag gaa gga aaa gaa aat aca aga ata Asn Gln Glu Leu Lys Gln Glu Lys Glu Gly Lys Glu Asn Thr Arg Ile 465 470 475			1680
aca aac ttg aca gta aat act gga cta gat tgt tca gaa aag acc aga Thr Asn Leu Thr Val Asn Thr Gly Leu Asp Cys Ser Glu Lys Thr Arg 480 485 490			1728
gag gag ggg aac ttt agg aaa tct ttt agc cca aaa gat gat act tca Glu Glu Gly Asn Phe Arg Lys Ser Phe Ser Pro Lys Asp Asp Thr Ser 495 500 505			1776
tta cat tta ttt cat att tcc act ggt aaa tct ccc aaa cat tct tgt Leu His Leu Phe His Ile Ser Thr Gly Lys Ser Pro Lys His Ser Cys 510 515 520 525			1824
gga tta agt gaa aaa cag tca aca cca cta aaa caa gaa cat act aaa Gly Leu Ser Glu Lys Gln Ser Thr Pro Leu Lys Gln Glu His Thr Lys 530 535 540			1872
aca tgt tta tca cca gga agt tct gaa atg tca tta cag cct gat ctt Thr Cys Leu Ser Pro Gly Ser Ser Glu Met Ser Leu Gln Pro Asp Leu 545 550 555			1920
gtt cgg tat gat aat aca gaa tct gaa ttc ttg cca gaa agt tca agt Val Arg Tyr Asp Asn Thr Glu Ser Glu Phe Leu Pro Glu Ser Ser Ser 560 565 570			1968
gta aaa tct tgt aag cat aag gaa aaa agc aaa cat cag aaa gat ttc Val Lys Ser Cys Lys His Lys Glu Lys Ser Lys His Gln Lys Asp Phe 575 580 585			2016
cac tta gaa ttt ggt gaa aaa tca aat gcc aaa ata aag gat gaa gat His Leu Glu Phe Gly Glu Lys Ser Asn Ala Lys Ile Lys Asp Glu Asp 590 595 600 605			2064
cat agt cca aca ttt gaa aat tca gat tgc aca ctg aaa aaa atg gat His Ser Pro Thr Phe Glu Asn Ser Asp Cys Thr Leu Lys Lys Met Asp 610 615 620			2112
aaa gaa ggt aaa aca tta aaa aaa cat aaa ttg aag cat aaa gag agg Lys Glu Gly Lys Thr Leu Lys Lys His Lys Leu Lys His Lys Glu Arg 625 630 635			2160

gaa aaa gaa aag cat aaa aaa gaa att gaa ggt gaa aag gaa aaa tac 2208
 Glu Lys Glu Lys His Lys Lys Glu Ile Glu Gly Glu Lys Glu Lys Tyr
 640 645 650

aaa act aag gat agt gcc aaa gaa ctg cag agg agt gtg gaa ttt gat 2256
 Lys Thr Lys Asp Ser Ala Lys Glu Leu Gln Arg Ser Val Glu Phe Asp
 655 660 665

aga gaa ttt tgg aaa gag aat ttt ttt aaa agt gat gaa act gaa gat 2304
 Arg Glu Phe Trp Lys Glu Asn Phe Phe Lys Ser Asp Glu Thr Glu Asp
 670 675 680 685

ctc ttt tta aat atg gaa cat gaa tcc tta aca tta gaa aaa aaa tca 2352
 Leu Phe Leu Asn Met Glu His Glu Ser Leu Thr Leu Glu Lys Lys Ser
 690 695 700

aaa ttg gaa aaa aac atc aaa gat gat aaa tca acc aag gaa aag cat 2400
 Lys Leu Glu Lys Asn Ile Lys Asp Asp Lys Ser Thr Lys Glu Lys His
 705 710 715

gtg tca aaa gag agg aac ttt aaa gag gaa cga gac aag att aaa aag 2448
 Val Ser Lys Glu Arg Asn Phe Lys Glu Glu Arg Asp Lys Ile Lys Lys
 720 725 730

gaa agc gag aaa tct ttt agg gag gaa aaa ata aaa gat cta aaa gaa 2496
 Glu Ser Glu Lys Ser Phe Arg Glu Glu Lys Ile Lys Asp Leu Lys Glu
 735 740 745

gag aga gaa aac ata ccc aca gat aaa gac tca gaa ttt act tct ttg 2544
 Glu Arg Glu Asn Ile Pro Thr Asp Lys Asp Ser Glu Phe Thr Ser Leu
 750 755 760 765

ggt atg agt gcc att gag gaa tct ata ggg ctt cat tta gtg gaa aag 2592
 Gly Met Ser Ala Ile Glu Glu Ser Ile Gly Leu His Leu Val Glu Lys
 770 775 780

gaa ata gac att gaa aaa caa gaa aag cat ata aag gaa aat aaa aaa 2640
 Glu Ile Asp Ile Glu Lys Gln Glu Lys His Ile Lys Glu Asn Lys Lys
 785 790 795

aaa aaa aaa ggg cgg ccg ctc tag agtatccctc gaggggccca agcttacgcg 2694
 Lys Lys Lys Gly Arg Pro Leu *
 800 805

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cgcagctagt caacctctca cctt 2778

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accattcctg ctgggcgcag tggctcatgc ctttaatccc agtcattaag gaggctgagg      180
tgggaagatt gcttgaaacc aggagattgc ctcaggcctg ggcaacatgg tgagacctct      240
tatctcaaaa aatcaaaaata aaaaattagc tgggcatggg ggctcatccc tgtagcccca      300
gcttctcaag aggctgaggt gggaggatag cttcagccta ggagacagaa gctgcagtga      360
gctatgatca caccactaca ctccagcctg gacaacagaa agagaccttg tctctaaaaa      420
caaaacaaaa caatcaaaca aaaaagtact cctgaattta agtattgatg gctatgggaa      480
ttgcttccta acctgtttga aaaatgtggt aactgttaca tattttgaga actgcagcac      540
tcagtgaagc tttgttaaag ggaatgagga gtttaggccc cagcaggcaa accacttcac      600
agtgctagga tgaagagctc aactcaggg acttcgagag tgaatcaact actttcgtta      660
actcaatggt aaatgagaat aacatcaacc ttggatgggt gtggtgagaa tcaaatgaaa      720
tgacat      atg gga aaa cct ttg tca cat gtt aca caa ttg acg gca act      768
              Met Gly Lys Pro Leu Ser His Val Thr Gln Leu Thr Ala Thr
                1             5             10

aca gct tta ggt aga att tca act tct aat ttt tac tac tat gca aat      816
Thr Ala Leu Gly Arg Ile Ser Thr Ser Asn Phe Tyr Tyr Tyr Ala Asn
  15             20             25             30

tat cag aat att tat gat gtt aac ttt tta aaa agg ttt tta aat aga      864
Tyr Gln Asn Ile Tyr Asp Val Asn Phe Leu Lys Arg Phe Leu Asn Arg
          35             40             45

aac ttt att taa ata aatgaactct tctcaacccc aaaaccagc ttctgatctt      919
Asn Phe Ile      *
              50

gactaagttc ataattactc agggaaaaac actgctgggt ccttataagc cactgtgctg      979
tacgaaatca attcatgaaa aggaaacgcc ctatttccaa gcatacctgt actagaatat      1039
attaagtata ttcacttaac atattaattt a                                1070

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ataaaacgga aaatttgcta gaatcaaga  atg atg gat cca tgt tca gtt gga      173
                               Met Met Asp Pro Cys Ser Val Gly
                               1                               5

gtc cag ctt cgt act aca aat gag tgc cat aaa acc tac tat act cgc      221
Val Gln Leu Arg Thr Thr Asn Glu Cys His Lys Thr Tyr Tyr Thr Arg
      10                               15                               20

cac aca ggt ttt aag act ttg caa gaa ttg tca tca aat gat atg ctt      269
His Thr Gly Phe Lys Thr Leu Gln Glu Leu Ser Ser Asn Asp Met Leu
      25                               30                               35                               40

tta ctt caa ctt aga act gga atg aca ctt tct ggg aac aat aca att      317
Leu Leu Gln Leu Arg Thr Gly Met Thr Leu Ser Gly Asn Asn Thr Ile
                               45                               50                               55

tgc ttt cat cat gta aaa att tac att gac aga ttt gag gat tta cag      365
Cys Phe His His Val Lys Ile Tyr Ile Asp Arg Phe Glu Asp Leu Gln
                               60                               65                               70

aag tca tgt tgt gac cca ttt aac ata cac aag aaa tta gcc aaa aaa      413
Lys Ser Cys Cys Asp Pro Phe Asn Ile His Lys Lys Leu Ala Lys Lys
      75                               80                               85

aat ttg cat gta att gac tta gat gat gcc act ttt ctg agt gct aaa      461
Asn Leu His Val Ile Asp Leu Asp Asp Ala Thr Phe Leu Ser Ala Lys
      90                               95                               100

ttt gga aga cag ctt gta cct ggt tgg aag ctt tgt cca aaa tgc aca      509
Phe Gly Arg Gln Leu Val Pro Gly Trp Lys Leu Cys Pro Lys Cys Thr
      105                               110                               115                               120

cag ata atc aat gga agt gtg gat gtt gat act gaa gac cgc cag aaa      557
Gln Ile Ile Asn Gly Ser Val Asp Val Asp Thr Glu Asp Arg Gln Lys
                               125                               130                               135

agg aaa cct gag tca gat gga aga act gct aaa gct ttg agg tca tta      605
Arg Lys Pro Glu Ser Asp Gly Arg Thr Ala Lys Ala Leu Arg Ser Leu
      140                               145                               150

caa ttt acg aat cca gga agg caa act gaa ttt gct cca gaa act ggt      653

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155 160 165	
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Lys Arg Glu Lys Arg Arg Leu Thr Lys Asn Ala Thr Ala Gly Ser Asp	
170 175 180	
aga caa gtg ata cca gca aag agt aag gtc tat gat agc cag ggt ctc	749
Arg Gln Val Ile Pro Ala Lys Ser Lys Val Tyr Asp Ser Gln Gly Leu	
185 190 195 200	
ctg att ttt agt ggg atg gac ctc tgt gac tgc ctg gat gaa gac tgc	797
Leu Ile Phe Ser Gly Met Asp Leu Cys Asp Cys Leu Asp Glu Asp Cys	
205 210 215	
tta gga tgt ttc tat gct tgt cct gcc tgt ggt tct acc aag tgt gga	845
Leu Gly Cys Phe Tyr Ala Cys Pro Ala Cys Gly Ser Thr Lys Cys Gly	
220 225 230	
gct gaa tgc cgc tgt gac cgc aag tgg ctg tat gag caa att gaa att	893
Ala Glu Cys Arg Cys Asp Arg Lys Trp Leu Tyr Glu Gln Ile Glu Ile	
235 240 245	
gaa gga gga gaa ata att cat aat aaa cat gct gga taa tctgcggtac	942
Glu Gly Gly Glu Ile Ile His Asn Lys His Ala Gly *	
250 255 260	
caaaactatgg agccttttaa ggtcttttatt tctaaaaatc tgttactcta agatacattt	1002
taagcttgat tatcatatga caaagattttt aaaaccatct cagtgtgccc taattttttca	1062
tcttgggtgc tttaagattc actatttgat ataaattcag ataggctatt tttcagtagt	1122
cagcgттааg cctgtctgga tcaatataaa caagtaggggt gtaggcagtc ctctatttgc	1182
atgtttccca tgggcacaaa tttcagtgac ctagatttag tttaaatacc agtttcctta	1242
ccaggaagga aagaaaactg gtaaggaaac tgttgttggt aaaatctagg ttaaaatttt	1302
agttagcaca ttgtaactga gtaattacat gaagtacaaa cctctctgct agctcttcag	1362
tctacaaatc gctatgtaaa taacagatat gcttcatgat tgtgaccagt catgttattt	1422
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aa	1784

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 catttttttcc agcaaagggtg gttttttgaaa gtaacctaata gaaaccctgg ctgccatggg 180
 catttttaatt ctggactgag aagaagcgac tctgcgttgt gctggtggcc caggcctgca 240
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 caggcaaata ctactgttaa cgttttaata gtaagtctac ttatgcacat tgattttact 840
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 tattttcttaa tgcagat atg aaa aac agt agc tcc gta tcg aat aca ttg 1010
 Met Lys Asn Ser Ser Ser Val Ser Asn Thr Leu
 1 5 10
 aca aat gga tgt gtc atc aat gga cat ttg gac ttc ccc tcc acg acc 1058
 Thr Asn Gly Cys Val Ile Asn Gly His Leu Asp Phe Pro Ser Thr Thr
 15 20 25
 ccg ctc agt ggg atg gaa agc agg aat ggc cag tgc ttg aca gga act 1106
 Pro Leu Ser Gly Met Glu Ser Arg Asn Gly Gln Cys Leu Thr Gly Thr
 30 35 40

aac gga att agc agt gga tta gcc cca gga cag ccg ttt ccg agt agc Asn Gly Ile Ser Ser Gly Leu Ala Pro Gly Gln Pro Phe Pro Ser Ser 45 50 55	1154
cag ggt tct ctc tgc att agt ggg act gag gag cca gag aag acc ctg Gln Gly Ser Leu Cys Ile Ser Gly Thr Glu Glu Pro Glu Lys Thr Leu 60 65 70 75	1202
aga gct aac cct gag ttg tgc ggt tct ctg cac ctg aac ggg agt cca Arg Ala Asn Pro Glu Leu Cys Gly Ser Leu His Leu Asn Gly Ser Pro 80 85 90	1250
agt agc tgc ata gcc agt agg cct tcc tgg gtg gaa gac att ggg gat Ser Ser Cys Ile Ala Ser Arg Pro Ser Trp Val Glu Asp Ile Gly Asp 95 100 105	1298
aac ctg tac tat gga cac tac cac ggg ttt ggg gac act gct gaa agc Asn Leu Tyr Tyr Gly His Tyr His Gly Phe Gly Asp Thr Ala Glu Ser 110 115 120	1346
atc cca gaa ctg aac agt gtg gtc gag cat tcc aag tcc gtg aag gtg Ile Pro Glu Leu Asn Ser Val Val Glu His Ser Lys Ser Val Lys Val 125 130 135	1394
cag gag cgg tac gac agt gcc gtg ctg ggc acc atg cac ctg cac cac Gln Glu Arg Tyr Asp Ser Ala Val Leu Gly Thr Met His Leu His His 140 145 150 155	1442
ggc tcc tag agacgct gacctggctc tcggaaacgc aggagtcctt cctggtagcc Gly Ser *	1498
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ttgacatgta ttttcttttt tccttgtttt tgttttttgg ggttttctgc tttaagatat	2278

ataccactat gtatatccag ttaactgaga gaattttgac tctcttaata aaactgcatt 2338
aagtttttga tttttagaaa attagctttt gtctaggcaa ctagtgggta tactctgcaa 2398
atattgtaat gaatttttac ttttttgatt tttgtaataa aaattgggtgc agataaaatg 2458
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ggaaggcaac gtggattctg tttttagagac attaattgagc tttaa atg gga att 294
Met Gly Ile
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ggg gat gat gta tgt cta caa aaa aaa aaa agt tgg agc ggc cgc caa 342
Gly Asp Asp Val Cys Leu Gln Lys Lys Lys Ser Trp Ser Gly Arg Gln
5 10 15
ctt agg ggc cac gtg agc cac ggc cac ggc cgc ata ggc aag cac cgg 390
Leu Arg Gly His Val Ser His Gly His Gly Arg Ile Gly Lys His Arg
20 25 30 35
aag cac ccc ggc ggc cgc ggt aat gct ggt ggt ctg cat cac cac cgg 438
Lys His Pro Gly Gly Arg Gly Asn Ala Gly Gly Leu His His His Arg
40 45 50
atc aac ttc gac aaa tac cac cca ggc tac ttt ggg aaa gtt ggt atg 486
Ile Asn Phe Asp Lys Tyr His Pro Gly Tyr Phe Gly Lys Val Gly Met
55 60 65
aag cat tac cac tta aag agg aac cag agc ttc tgc cca act gtc aac 534
Lys His Tyr His Leu Lys Arg Asn Gln Ser Phe Cys Pro Thr Val Asn
70 75 80
ctt gac aaa ttg tgg act ttg gtc agt gaa cag aca cgg gtg aat gct 582

Leu	Asp	Lys	Leu	Trp	Thr	Leu	Val	Ser	Glu	Gln	Thr	Arg	Val	Asn	Ala		
85						90					95						
gct aaa aac aag act ggg gct gct ccc atc att gat gtg gtg cga tcg 630																	
Ala Lys Asn Lys Thr Gly Ala Ala Pro Ile Ile Asp Val Val Arg Ser																	
100					105				110					115			
ggc tac tat aaa gtt ctg gga aag gga aag ctc cca aag cag cct gtc 678																	
Gly Tyr Tyr Lys Val Leu Gly Lys Gly Lys Leu Pro Lys Gln Pro Val																	
				120				125						130			
atc gtg aag gcc aaa ttc ttc agc aga aga gct gag gag aag att aag 726																	
Ile Val Lys Ala Lys Phe Phe Ser Arg Arg Ala Glu Glu Lys Ile Lys																	
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agt gtt ggg ggg gcc tgt gtc ctg gtg gct tga agccacat ggagggagtt 777																	
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                          1             5             10

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Thr Lys Asp Lys Glu Ser Leu Asn Phe Pro Phe Phe Trp Ala Pro Ile
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Gly Ser Ser Ile Tyr Asn Val Ser Gly Leu Val Gly Gly Arg Leu Ser
                      30             35             40

att gag gta tca tgt gtg ttc acc tgc ctc tct tgc cct att tct ttg      913
Ile Glu Val Ser Cys Val Phe Thr Cys Leu Ser Cys Pro Ile Ser Leu
                      45             50             55

gtt gct ata aat ttc ctg ctt ctc aaa tat ctg gat ttt tgg cta cct      961
Val Ala Ile Asn Phe Leu Leu Leu Lys Tyr Leu Asp Phe Trp Leu Pro
                      60             65             70             75

att tgg ctt ccg tct ttg gtg ttt ata tct gtc tgg ttt tag caggtct      1010
Ile Trp Leu Pro Ser Leu Val Phe Ile Ser Val Trp Phe *
                      80             85

ctctgattcc tgaccacag ctctctcct tctctaatat tcaagtatgc tgcttccta      1070

actcctcatt ccttctcctt gaatttcact ttacaattgc gctaggttct aacatcgttg      1130

gccatagatt accacaaaac ataatttctt aaattctgca aatttctaata gtttctaatac      1190

ttggtttcct acaagatcta acactaagct tgtgttatcc tgattacagt gtatataaaa      1250

caatgcttgt ggaaaattaa cctaggagaa agcttatagg ggaaacctga tgatgaattt      1310

tattaaatta ataaccctta taacaatttc aaatgtaata ctatctggat ttgaacttca      1370

atacttttcc taagtaaaat tcttaaccat ggtagaagtt atgtttgttg atgttcactc      1430

atctataccc tccatattct cagcaaagtt ggcataaatc tgacctgaat aaacaggggt      1490

ataacattat caggcttgta aaatacttta tcaaataaat gcatcagtta aagcaggggt      1550

ccccagccct gggctgtgtg tggcctgtta ggaatcgggc cacacagttg gtgagctgag      1610

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<400> 95

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taagtttttg tattccacta ctttcagttc aataaaacct agagttggtt catctgcgcc	180
taaagtgtat ggcacaattt tcttaagaat taggggaacc aggtgcctac agttaagga	240
acgttttcagt tccttttcatt cattcctggg tttttctttt attttctaag aaggttgaag	300
aaggatgagt gatagagaag aaagcaacac cattgatttt tttttttaag aa atg	355
	Met
	1
ata tat ata tgt ata tgt ttg tgt gtg tgt gtg tgt gtg gta ttc	403
Ile Tyr Ile Cys Ile Cys Leu Cys Val Cys Val Cys Val Cys Val Phe	
5 10 15	
tgt gca tta ttt tgt cat gat ctc aat tct ctt ctt tcc acc aaa gtt	451
Cys Ala Leu Phe Cys His Asp Leu Asn Ser Leu Leu Ser Thr Lys Val	
20 25 30	
tgt cgt aat att ttc tcc tga ag gtgcattctg gtccttttaa attagtcagt	504
Cys Arg Asn Ile Phe Ser *	
35 40	
gttatattgt aggagactgt catggaaaaa aggactcagt ttactttcgt ctttttcaca	564
ggggaacctt ttaaaacaat cttttcagca gcagatacct ttaaccctaa taatctcagg	624
ccttgatgaa aatactatat tttgtagatt atgggttaaag ggggaaaatt actagttccg	684
taagataaat atgagctcca tttgacttct gatgtctggt ttagcattac ataatatgtt	744
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aatggactga atatgctttt ttgggtgatga aatctcatgt acgatattta tagtgatgtg	864
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ggcgccagga gaaagactgt gttttctccc acgctacctg ccgcccgtc ttctcttggc	240
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aataatgctg atggagtggc cacagatata acttctacca gatccttaaa ttacaaaagc	420
actagcagcg gtcacagaga aatatcatca cctaggattc aggatgctgg acctgcttcc	480
cgagatgtcc aggccactgg cagaatcgca gatgatgctg acccaagagt agcacttggt	540
aacgattctt tatctgatgt cacaagtacc acatcttcta ggggtggatga tcatgactca	600
gaggaaatth gtcttgacca tctgtgtaag gggtgtccgc ttaatggtag ctgcagcaaa	660
gtccacttcc atctgcctta ccggtggcag	
atg ctt att ggt aaa acc tgg	711
Met Leu Ile Gly Lys Thr Trp	
1 5	
acg gac ttt gag cac atg gag acg atc gag aaa ggc tac tgt aac ccc	759
Thr Asp Phe Glu His Met Glu Thr Ile Glu Lys Gly Tyr Cys Asn Pro	
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gga atc cac ctc tgt tct gta gga agt tat aca atc aat ttt cgg gta	807
Gly Ile His Leu Cys Ser Val Gly Ser Tyr Thr Ile Asn Phe Arg Val	
25 30 35	
atg agt tgt gat tcc ttt ccc atc cga cgc ctc tcc act cct tct tct	855
Met Ser Cys Asp Ser Phe Pro Ile Arg Arg Leu Ser Thr Pro Ser Ser	
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gtc acc aag cca gcc aat tct gtc ttc acc acc aaa tgg att tgg tat	903
Val Thr Lys Pro Ala Asn Ser Val Phe Thr Thr Lys Trp Ile Trp Tyr	
60 65 70	
tgg aag aat gaa tct ggc aca tgg att cag tat gga gaa gag aaa gac	951
Trp Lys Asn Glu Ser Gly Thr Trp Ile Gln Tyr Gly Glu Glu Lys Asp	
75 80 85	

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aaa cgg aaa aat tca aac gtc gac tct tca tac ctg gag tct ctc tat      999
Lys Arg Lys Asn Ser Asn Val Asp Ser Ser Tyr Leu Glu Ser Leu Tyr
          90                      95                      100

caa tcc tgt ccg agg gga gtt gtg cca ttt cag gcg ggc tca cgg aac      1047
Gln Ser Cys Pro Arg Gly Val Val Pro Phe Gln Ala Gly Ser Arg Asn
          105                      110                      115

tat gag ctg agt ttc caa ggg atg att cag aca aac ata gct tcc aaa      1095
Tyr Glu Leu Ser Phe Gln Gly Met Ile Gln Thr Asn Ile Ala Ser Lys
          120                      125                      130                      135

act caa aag gat gtc atc aga aga cca aca ttt gtg cct cag tgg tat      1143
Thr Gln Lys Asp Val Ile Arg Arg Pro Thr Phe Val Pro Gln Trp Tyr
          140                      145                      150

gtg cag cag atg aag aga ggg cca gag taa g tgttctgaag cagctgtttg      1194
Val Gln Gln Met Lys Arg Gly Pro Glu *
          155                      160

ctgacagatg cttgagatgt tcatgccctg ggctcatcaa gtcactcgtg aatctggagc      1254

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gctctggtaa gccaaagactc cttgtgttta cctgttcac tctgcaatct agggggtagc      180

attttgtcct gtgtccttac cggcaaaacg atgtataaat gaaagaaatt gagatgggtgc      240

acgatgcaca gttgaagtga acttgcgggg tttttcagta tctacgattc atagatctgg      300

aattcgcggc cgcgtcgacg aaatatctct ttcaataatg aaagaataag aaaaagaaat      360

agaagagctg gaaacaatag gtaaagttta ggctaggcct tagacttctc ctgcattgta      420

atccttctgg tttgccacat atgcatgctg tcaggaagtt gatgaggt atg tac agg      477
                               Met Tyr Arg

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 His Leu Leu Asn Val Ser Ser Gln Ala Ile Leu Pro Ile Gly Ala Arg
 20 25 30 35

agc cgc caa ttt gtc aac gtg agt tga aatct ctttcccat tcacccacc 625
 Ser Arg Gln Phe Val Asn Val Ser *
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gtcccgggcc cggagcgcta ggagcgcgcg gaaggagcc atg gct ctg gac ggg 174
 Met Ala Leu Asp Gly
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ata agg atg cca gat ggc tgc tac gcg gac ggg acg tgg gaa ctg agt 222
 Ile Arg Met Pro Asp Gly Cys Tyr Ala Asp Gly Thr Trp Glu Leu Ser
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Val	His	Val	Thr	Asp	Leu	Asn	Arg	Asp	Val	Thr	Leu	Arg	Val	Thr	Gly	
			25					30					35			
gag	gtg	cac	att	gga	ggc	gtg	atg	ctt	aag	ctg	gtg	gag	aaa	ctc	gat	318
Glu	Val	His	Ile	Gly	Gly	Val	Met	Leu	Lys	Leu	Val	Glu	Lys	Leu	Asp	
			40					45					50			
gta	aaa	aaa	gat	tgg	tct	gac	cat	gct	ctc	tgg	tgg	gaa	aag	aag	aga	366
Val	Lys	Lys	Asp	Trp	Ser	Asp	His	Ala	Leu	Trp	Trp	Glu	Lys	Lys	Arg	
			55					60					65			
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Thr	Trp	Leu	Leu	Lys	Thr	His	Trp	Thr	Leu	Asp	Lys	Tyr	Gly	Ile	Gln	
			70					75					80		85	
gca	gat	gct	aag	ctt	cag	ttc	acc	cct	cag	cac	aaa	ctg	ctc	cgc	ctg	462
Ala	Asp	Ala	Lys	Leu	Gln	Phe	Thr	Pro	Gln	His	Lys	Leu	Leu	Arg	Leu	
			90					95					100			
cag	ctt	ccc	aac	atg	aag	tat	gtg	aag	gtg	aaa	gtg	aat	ttc	tct	gat	510
Gln	Leu	Pro	Asn	Met	Lys	Tyr	Val	Lys	Val	Lys	Val	Asn	Phe	Ser	Asp	
			105					110					115			
aga	gtc	ttc	aaa	gct	gtt	tct	gac	atc	tgt	aag	act	ttt	aat	atc	aga	558
Arg	Val	Phe	Lys	Ala	Val	Ser	Asp	Ile	Cys	Lys	Thr	Phe	Asn	Ile	Arg	
			120					125					130			
cac	ccc	gaa	gaa	ctt	tct	ctc	tta	aag	aaa	ccc	aga	gat	cca	aca	aaa	606
His	Pro	Glu	Glu	Leu	Ser	Leu	Leu	Lys	Lys	Pro	Arg	Asp	Pro	Thr	Lys	
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aaa	aaa	aaa	aaa	aag	cta	gat	gac	cag	tct	gaa	gat	gag	gca	ctt	gaa	654
Lys	Lys	Lys	Lys	Lys	Leu	Asp	Asp	Gln	Ser	Glu	Asp	Glu	Ala	Leu	Glu	
			150					155					160		165	
tta	gag	ggg	cct	ctt	atc	act	cct	gga	tca	gga	agt	ata	tat	tca	agc	702
Leu	Glu	Gly	Pro	Leu	Ile	Thr	Pro	Gly	Ser	Gly	Ser	Ile	Tyr	Ser	Ser	
			170					175					180			
cca	gga	ctg	tat	agt	aaa	aca	atg	acc	ccc	act	tat	gat	gct	cat	gat	750
Pro	Gly	Leu	Tyr	Ser	Lys	Thr	Met	Thr	Pro	Thr	Tyr	Asp	Ala	His	Asp	
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gga	agc	ccc	ttg	tca	cca	act	tct	gct	tgg	ttt	ggg	gac	agt	gct	ttg	798
Gly	Ser	Pro	Leu	Ser	Pro	Thr	Ser	Ala	Trp	Phe	Gly	Asp	Ser	Ala	Leu	
			200					205					210			
tca	gaa	ggc	aat	cct	ggg	ata	ctt	gct	gtc	agt	caa	cca	atc	acg	tca	846
Ser	Glu	Gly	Asn	Pro	Gly	Ile	Leu	Ala	Val	Ser	Gln	Pro	Ile	Thr	Ser	
			215					220					225			
cca	gaa	atc	ttg	gca	aaa	atg	ttc	aag	cct	caa	gct	ctt	ctt	gat	aaa	894
Pro	Glu	Ile	Leu	Ala	Lys	Met	Phe	Lys	Pro	Gln	Ala	Leu	Leu	Asp	Lys	

Ala	Lys	Ile	Asn	Gln	Gly	Trp	Leu	Asp	Ser	Ser	Arg	Ser	Leu	Met	Glu		
				250					255					260			
caa	gat	gtg	aag	gaa	aat	gag	gcc	ttg	ctg	ctc	cga	ttc	aag	tat	tac	990	
Gln	Asp	Val	Lys	Glu	Asn	Glu	Ala	Leu	Leu	Leu	Arg	Phe	Lys	Tyr	Tyr		
				265					270					275			
agc	ttt	ttt	gat	ttg	aat	cca	aag	tat	gat	gca	atc	aga	atc	aat	cag	1038	
Ser	Phe	Phe	Asp	Leu	Asn	Pro	Lys	Tyr	Asp	Ala	Ile	Arg	Ile	Asn	Gln		
				280					285					290			
ctt	tac	gag	cag	gcc	aaa	tgg	gcc	att	ctc	ctg	gaa	gag	att	gaa	tgc	1086	
Leu	Tyr	Glu	Gln	Ala	Lys	Trp	Ala	Ile	Leu	Leu	Glu	Glu	Ile	Glu	Cys		
				295					300					305			
aca	gaa	gaa	gaa	atg	atg	atg	ttt	gca	gcc	ctg	cag	tat	cat	atc	aat	1134	
Thr	Glu	Glu	Glu	Met	Met	Met	Phe	Ala	Ala	Leu	Gln	Tyr	His	Ile	Asn		
				310					315					320			325
aag	ctg	tca	atc	agg	aca	tca	gag	aat	cat	ttg	aac	aac	agt	gac	aaa	1182	
Lys	Leu	Ser	Ile	Arg	Thr	Ser	Glu	Asn	His	Leu	Asn	Asn	Ser	Asp	Lys		
				330					335					340			
gaa	gtt	gat	gaa	gtt	gat	gct	gcc	ctt	tca	gac	ctg	gag	att	act	ctg	1230	
Glu	Val	Asp	Glu	Val	Asp	Ala	Ala	Leu	Ser	Asp	Leu	Glu	Ile	Thr	Leu		
				345					350					355			
gaa	ggg	ggg	aaa	acg	tca	aca	att	ttg	ggg	gac	att	act	tcc	att	cct	1278	
Glu	Gly	Gly	Lys	Thr	Ser	Thr	Ile	Leu	Gly	Asp	Ile	Thr	Ser	Ile	Pro		
				360					365					370			
gaa	ctt	gct	gac	tac	att	aaa	gtt	ttc	aag	cca	aaa	aag	ctg	act	ctg	1326	
Glu	Leu	Ala	Asp	Tyr	Ile	Lys	Val	Phe	Lys	Pro	Lys	Lys	Leu	Thr	Leu		
				375					380					385			
aaa	ggg	tac	aaa	caa	tat	tgg	tgc	acc	ttc	aaa	gac	aca	tcc	att	tct	1374	
Lys	Gly	Tyr	Lys	Gln	Tyr	Trp	Cys	Thr	Phe	Lys	Asp	Thr	Ser	Ile	Ser		
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tgt	tat	aag	agc	aaa	gaa	gaa	tcc	agt	ggc	aca	cca	gct	cat	cag	atg	1422	
Cys	Tyr	Lys	Ser	Lys	Glu	Glu	Ser	Ser	Gly	Thr	Pro	Ala	His	Gln	Met		
				410					415					420			
aac	ctc	agg	gga	tgt	gaa	gtt	acc	cca	gat	gta	aac	att	tca	ggc	caa	1470	
Asn	Leu	Arg	Gly	Cys	Glu	Val	Thr	Pro	Asp	Val	Asn	Ile	Ser	Gly	Gln		
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Lys	Phe	Asn	Ile	Lys	Leu	Leu	Ile	Pro	Val	Ala	Glu	Gly	Met	Asn	Glu		
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Ile	Trp	Leu	Arg	Cys	Asp	Asn	Glu	Lys	Gln	Tyr	Ala	His	Trp	Met	Ala		
				455					460					465			
gcc	tgc	agat	atta	gcc	tcc	aaa	ggc	aag	acc	atg	gcg	gac	agt	tct	tac	1614	
Ala	Cys	Arg	Leu	Ala	Ser	Lys	Gly	Lys	Thr	Met	Ala	Asp	Ser	Ser	Tyr		

470	475	480	485	
aac tta gaa gtt cag aat att ctt tcc ttt ctg aag atg cag cat tta				1662
Asn Leu Glu Val Gln Asn Ile Leu Ser Phe Leu Lys Met Gln His Leu				
	490	495	500	
aac cca gat cct cag tta ata cca gag cag atc acg act gat ata act				1710
Asn Pro Asp Pro Gln Leu Ile Pro Glu Gln Ile Thr Thr Asp Ile Thr				
	505	510	515	
cct gaa tgt ttg gtg tct ccc cgc tat cta aaa aag tat aag aac aag				1758
Pro Glu Cys Leu Val Ser Pro Arg Tyr Leu Lys Lys Tyr Lys Asn Lys				
	520	525	530	
cag ata aca gcg aga atc ttg gag gcc cat cag aat gta gct cag atg				1806
Gln Ile Thr Ala Arg Ile Leu Glu Ala His Gln Asn Val Ala Gln Met				
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agt cta att gaa gcc aag atg aga ttt att caa gct tgg cag tca cta				1854
Ser Leu Ile Glu Ala Lys Met Arg Phe Ile Gln Ala Trp Gln Ser Leu				
	550	555	560	565
cct gaa ttt ggc atc act cac ttc att gca agg ttc caa ggg ggc aaa				1902
Pro Glu Phe Gly Ile Thr His Phe Ile Ala Arg Phe Gln Gly Gly Lys				
	570	575	580	
aaa gaa gaa ctt att gga att gca tac aac aga ctg att cgg atg gat				1950
Lys Glu Glu Leu Ile Gly Ile Ala Tyr Asn Arg Leu Ile Arg Met Asp				
	585	590	595	
gcc agc act gga gat gca att aaa aca tgg cgt ttc agc aac atg aaa				1998
Ala Ser Thr Gly Asp Ala Ile Lys Thr Trp Arg Phe Ser Asn Met Lys				
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cag tgg aat gtc aac tgg gaa atc aaa atg gtc acc gta gag ttt gca				2046
Gln Trp Asn Val Asn Trp Glu Ile Lys Met Val Thr Val Glu Phe Ala				
	615	620	625	
gat gaa gta cga ttg tcc ttc att tgt act gaa gta gat tgc aaa gtg				2094
Asp Glu Val Arg Leu Ser Phe Ile Cys Thr Glu Val Asp Cys Lys Val				
	630	635	640	645
gtt cat gaa ttc att ggt ggc tac ata ttt ctc tca aca cgt gca aaa				2142
Val His Glu Phe Ile Gly Gly Tyr Ile Phe Leu Ser Thr Arg Ala Lys				
	650	655	660	
gac caa aac gag agt tta gat gaa gag atg ttc tac aaa ctt acc agt				2190
Asp Gln Asn Glu Ser Leu Asp Glu Glu Met Phe Tyr Lys Leu Thr Ser				
	665	670	675	
ggg tgg gtg tga ata gaaatactgt ttaatgaaac tccacggcca taacaatatt				2245
Gly Trp Val *				
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 Ile Gly Gly Ser Asn His Leu Ala Val Val Leu Asp Asp Ile Ile Leu
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 Ala Val Ile Asp Ser Ile Phe Val Trp Phe Ile Phe Ile Ser Leu Ala
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aga	ttg	agg	tgg	cta	agg	cag	acg	ttg	gaa	tct	ttc	atc	cca	cag	cct	643
Arg	Leu	Arg	Trp	Leu	Arg	Gln	Thr	Leu	Glu	Ser	Phe	Ile	Pro	Gln	Pro	
				170					175				180			
ttg	ata	aat	gta	att	aaa	gtg	tct	gaa	ttg	gat	ggc	aga	aaa	atg	gga	691
Leu	Ile	Asn	Val	Ile	Lys	Val	Ser	Glu	Leu	Asp	Gly	Arg	Lys	Met	Gly	
				185					190				195			
gat	gcc	cag	cct	gaa	atg	ttt	gac	aag	gtg	tta	gtg	gat	gct	ccg	tgt	739
Asp	Ala	Gln	Pro	Glu	Met	Phe	Asp	Lys	Val	Leu	Val	Asp	Ala	Pro	Cys	
				200					205				210			
tca	aat	gat	cga	agc	tgg	ttg	ttt	tct	tct	gac	tct	cag	aag	gca	tcc	787
Ser	Asn	Asp	Arg	Ser	Trp	Leu	Phe	Ser	Ser	Asp	Ser	Gln	Lys	Ala	Ser	
				215					220				225			
230																
tgt	agg	ata	agt	caa	agg	agg	aat	ttg	cct	ctt	cta	cag	ata	gag	ctg	835
Cys	Arg	Ile	Ser	Gln	Arg	Arg	Asn	Leu	Pro	Leu	Leu	Gln	Ile	Glu	Leu	
				235					240				245			
tta	agg	tct	gca	att	aag	gcc	tta	cgt	cct	gga	ggg	ata	ctt	gta	tac	883
Leu	Arg	Ser	Ala	Ile	Lys	Ala	Leu	Arg	Pro	Gly	Gly	Ile	Leu	Val	Tyr	
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tct	aca	tgc	acg	ctt	tcc	aag	gca	gaa	aat	caa	gat	gtg	atc	agt	gaa	931
Ser	Thr	Cys	Thr	Leu	Ser	Lys	Ala	Glu	Asn	Gln	Asp	Val	Ile	Ser	Glu	
				265					270				275			
att	tta	aac	tcc	cac	ggg	aac	atc	atg	cct	atg	gac	att	aaa	gga	ata	979
Ile	Leu	Asn	Ser	His	Gly	Asn	Ile	Met	Pro	Met	Asp	Ile	Lys	Gly	Ile	
				280					285				290			
gca	agg	act	tgc	tcc	cac	gac	ttc	aca	ttt	gct	ccc	act	ggc	cag	gaa	1027
Ala	Arg	Thr	Cys	Ser	His	Asp	Phe	Thr	Phe	Ala	Pro	Thr	Gly	Gln	Glu	
				295					300				305			
310																
tgt	ggg	ctc	tta	gtg	att	cca	gat	aag	ggc	aaa	gcc	tgg	ggc	cca	atg	1075
Cys	Gly	Leu	Leu	Val	Ile	Pro	Asp	Lys	Gly	Lys	Ala	Trp	Gly	Pro	Met	
				315					320				325			
tat	gta	gcc	aaa	ttg	aag	aaa	tca	tgg	agc	aca	gga	aaa	tgg	tga	cat	1123
Tyr	Val	Ala	Lys	Leu	Lys	Lys	Ser	Trp	Ser	Thr	Gly	Lys	Trp	*		
				330					335				340			
gaatttgtaa	actgtgttta	tgtgttatta	tatttatatt	tctgaactca	gtacatgtta											1183
atattttaa	aattatgcag	taactttctc	tgggtctgtt	tggaatccta	tttagttaat											1243
acttttagcat	cttagaatct	aggcttgagc	gctacccaaa	acttaatgaa	tgatggctgc											1303
agttggctcg	gcttgccctac	tttaa	aatgag	gcaa	acatca	gctcctagt	ccattcccca									1363
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                                   Met
                                   1
cag ctc ttc aat gga gga tgc cca ccc cct cct cct gtc ctg aat ggt      163
Gln Leu Phe Asn Gly Gly Cys Pro Pro Pro Pro Pro Val Leu Asn Gly
                    5                      10                      15
gag gac gtg ctt cct gac ctg aac ctc ctc cca ccc ctt caa ccg ccc      211
Glu Asp Val Leu Pro Asp Leu Asn Leu Leu Pro Pro Leu Gln Pro Pro
                20                      25                      30
ctt cca ggg ctt ctg cct tct gaa aag gag gct cct gct cca atg ggg      259
Leu Pro Gly Leu Leu Pro Ser Glu Lys Glu Ala Pro Ala Pro Met Gly
                35                      40                      45
gcc tca ctc att gca aac tta aag cag ctg cac ctg tcc ccg ccc ccg      307
Ala Ser Leu Ile Ala Asn Leu Lys Gln Leu His Leu Ser Pro Pro Pro
                50                      55                      60                      65
ccc cca cca cag gcc cca gcg gag gga cct tca gtc cag ccc ggt ccc      355
Pro Pro Pro Gln Ala Pro Ala Glu Gly Pro Ser Val Gln Pro Gly Pro
                    70                      75                      80
ctc agg ccc atg gag gaa gag ctg cca cct ccc ccg gca gaa cct gtt      403
Leu Arg Pro Met Glu Glu Glu Leu Pro Pro Pro Pro Ala Glu Pro Val
                    85                      90                      95
gag aaa ggg gca tcc aca gac atc tgt gcc ttc tgc cac aag acc gtg      451
Glu Lys Gly Ala Ser Thr Asp Ile Cys Ala Phe Cys His Lys Thr Val
                100                      105                      110
ttc ccc cga gag ctg gct gtg gag gcc atg aag agg cag tac cat gcc      499
Phe Pro Arg Glu Leu Ala Val Glu Ala Met Lys Arg Gln Tyr His Ala
                115                      120                      125
cag tgc ttc acg tgc cgc acc tgc cgc cgc cag ctg gct ggg cag agc      547
Gln Cys Phe Thr Cys Arg Thr Cys Arg Arg Gln Leu Ala Gly Gln Ser
                130                      135                      140                      145
ttc tac cag aag gat ggg cga ccc ctc tgc gaa ccc tgc tac cag gac      595

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Phe Tyr Gln Lys Asp Gly Arg Pro Leu Cys Glu Pro Cys Tyr Gln Asp	
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Thr Leu Glu Arg Cys Gly Lys Cys Gly Glu Val Val Arg Asp His Ile	
165 170 175	
atc agg gcc ctg ggc cag gcc ttc cac ccc tcc tgc ttc acg tgt gtg	691
Ile Arg Ala Leu Gly Gln Ala Phe His Pro Ser Cys Phe Thr Cys Val	
180 185 190	
acc tgc gcc cgg tgc att ggg gat gag agc ttt gcc ctg ggc agc cag	739
Thr Cys Ala Arg Cys Ile Gly Asp Glu Ser Phe Ala Leu Gly Ser Gln	
195 200 205	
aac gag gtg tac tgc ctg gac gac ttc tac agg aaa ttc gcc ccc gtc	787
Asn Glu Val Tyr Cys Leu Asp Asp Phe Tyr Arg Lys Phe Ala Pro Val	
210 215 220 225	
tgc agc atc tgt gaa aat ccc atc atc cct cgg gat ggg aaa gat gcc	835
Cys Ser Ile Cys Glu Asn Pro Ile Ile Pro Arg Asp Gly Lys Asp Ala	
230 235 240	
ttc aaa atc gaa tgc atg gga aga aac ttc cat gaa aat tgc tac agg	883
Phe Lys Ile Glu Cys Met Gly Arg Asn Phe His Glu Asn Cys Tyr Arg	
245 250 255	
tgt gag gac tgc agg atc ctc ctg tct gtc gag ccc acg gac caa ggc	931
Cys Glu Asp Cys Arg Ile Leu Leu Ser Val Glu Pro Thr Asp Gln Gly	
260 265 270	
tgc tac ccc ctg aac aac cat ctc ttc tgc aag cca tgc cat gtg aag	979
Cys Tyr Pro Leu Asn Asn His Leu Phe Cys Lys Pro Cys His Val Lys	
275 280 285	
cgg agt gct gcg ggg tgc tgc tga gaggccccgc tgggcagtga acagaccact	1033
Arg Ser Ala Ala Gly Cys Cys *	
290 295	
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 caggaactgg cgctgaagac cctggggaca gatggccttt ttctcttttc ctccttggac 240
 actgacgggg at atg tac atc agc cct gag gag ttc aaa ccc att gct 288
 Met Tyr Ile Ser Pro Glu Glu Phe Lys Pro Ile Ala
 1 5 10
 gag aag cta aca ggg tca act ccc gcg gcc agc tac gag gag gag gag 336
 Glu Lys Leu Thr Gly Ser Thr Pro Ala Ala Ser Tyr Glu Glu Glu Glu
 15 20 25
 ttg ccc cct gac cct agc gag gag acg ctc acc ata gaa gcc cga ttc 384
 Leu Pro Pro Asp Pro Ser Glu Glu Thr Leu Thr Ile Glu Ala Arg Phe
 30 35 40
 cag cct ctg ctc ccg gag acc atg acc aag agc aaa gat ggc ttc cta 432
 Gln Pro Leu Leu Pro Glu Thr Met Thr Lys Ser Lys Asp Gly Phe Leu
 45 50 55 60
 ggg gtc tcc cgc ctc gcc ctg tcc ggc ctc aga aac tgg aca gcc gcc 480
 Gly Val Ser Arg Leu Ala Leu Ser Gly Leu Arg Asn Trp Thr Ala Ala
 65 70 75
 gcc tca cca agt gca gtg ttt gcc acc cgc cac ttc cag ccc ttc ctt 528
 Ala Ser Pro Ser Ala Val Phe Ala Thr Arg His Phe Gln Pro Phe Leu
 80 85 90
 ccc ccg cca ggc cag gag ctg ggt gag ccc tgg tgg atc atc ccc agt 576
 Pro Pro Pro Gly Gln Glu Leu Gly Glu Pro Trp Trp Ile Ile Pro Ser
 95 100 105
 gag ctg agc atg ttc act ggc tac ctg tcc aac aac cgc ttc tat cca 624
 Glu Leu Ser Met Phe Thr Gly Tyr Leu Ser Asn Asn Arg Phe Tyr Pro
 110 115 120
 ccg ccg ccc aag ggc aag gag gtc atc atc cac cgg ctc ctg agc atg 672
 Pro Pro Pro Lys Gly Lys Glu Val Ile Ile His Arg Leu Leu Ser Met
 125 130 135 140
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 Phe His Pro Arg Pro Phe Val Lys Thr Arg Phe Ala Pro Gln Gly Ala
 145 150 155
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 Val Ala Cys Leu Thr Ala Ile Ser Asp Phe Tyr Tyr Thr Val Met Phe
 160 165 170
 cgg atc cat gcc gag ttc cag ctc agt gag ccg ccc gac ttc ccc ttt 816
 Arg Ile His Ala Glu Phe Gln Leu Ser Glu Pro Pro Asp Phe Pro Phe
 175 180 185
 tgg ttc tcc cct gct cag ttc acc ggc cac atc atc ctc tcc aaa gac 864
 Trp Phe Ser Pro Ala Gln Phe Thr Gly His Ile Ile Leu Ser Lys Asp

190	195	200	
gcc acc cac gtc cgc gac ttc cgg ctc ttc gtg ccc aac cac agg tct			912
Ala Thr His Val Arg Asp Phe Arg Leu Phe Val Pro Asn His Arg Ser			
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ctg aat gtg gac atg gag tgg ctt tac ggg gcc agt gaa agc agc aac			960
Leu Asn Val Asp Met Glu Trp Leu Tyr Gly Ala Ser Glu Ser Ser Asn			
	225	230	235
atg gag gtg gac atc ggc tac ata ccc cag atg gag ctg gag gcc acg			1008
Met Glu Val Asp Ile Gly Tyr Ile Pro Gln Met Glu Leu Glu Ala Thr			
	240	245	250
ggc ccc tct gtg ccc tcc gtg atc ctg gat gag gat ggc agc atg atc			1056
Gly Pro Ser Val Pro Ser Val Ile Leu Asp Glu Asp Gly Ser Met Ile			
	255	260	265
gac agc cac ctg ccc tca ggg gag ccc ctg cag ttt gtg ttt gag gag			1104
Asp Ser His Leu Pro Ser Gly Glu Pro Leu Gln Phe Val Phe Glu Glu			
	270	275	280
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Ile Lys Trp Gln Gln Glu Leu Ser Trp Glu Glu Ala Ala Arg Arg Leu			
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gag gtg gcc atg tac ccc ttc aag aag gtc tcc tac ttg ccg ttc act			1200
Glu Val Ala Met Tyr Pro Phe Lys Lys Val Ser Tyr Leu Pro Phe Thr			
	305	310	315
gag gcc ttc gac cga gcc aag gct gag aac aag ctg gtg cac tca atc			1248
Glu Ala Phe Asp Arg Ala Lys Ala Glu Asn Lys Leu Val His Ser Ile			
	320	325	330
ctg ctg tgg ggg gcc ctg gat gac cag tcc tgc tga gggt cagggcggac			1298
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<212> DNA
<213> Homo sapiens

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<221> CDS
<222> (56)..(598)

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Gln Cys Leu Ala Ser Gln Ala Ala Ala Ser Arg Asp Cys Phe Arg Arg
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gaa ccc acg ctt ctg acc tgt gct ctg tct ttg cag ttc tgc acg gag 154
Glu Pro Thr Leu Leu Thr Cys Ala Leu Ser Leu Gln Phe Cys Thr Glu
      20              25              30

cta aac cag ccg acc ctg ccc aac atc cgc aag tgg aag ggg ccc cgg 202
Leu Asn Gln Pro Thr Leu Pro Asn Ile Arg Lys Trp Lys Gly Pro Arg
      35              40              45

gga tgc tgg aag gct gtt gtt gct gag aag ccc tcg aat cag ctc cag 250
Gly Cys Trp Lys Ala Val Val Ala Glu Lys Pro Ser Asn Gln Leu Gln
      50              55              60              65

aag gta ccc tcg tct gca aag cct ggc ctt tcc ctt cat tta att tat 298
Lys Val Pro Ser Ser Ala Lys Pro Gly Leu Ser Leu His Leu Ile Tyr

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Thr Tyr Phe Ser Pro Asn Gln Gly His Leu Lys Ile Ser Phe Ala Asn							
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atc ccc ggt tca att ttg tat ttc tgc cca att ttt aaa tcc ttg cca						394	
Ile Pro Gly Ser Ile Leu Tyr Phe Cys Pro Ile Phe Lys Ser Leu Pro							
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ttc att tcc aaa tgc cct ggt ttt cgg ttc acg ttt aga ttg gta atg						442	
Phe Ile Ser Lys Cys Pro Gly Phe Arg Phe Thr Phe Arg Leu Val Met							
	115		120		125		
gac tcc tgc caa gaa gga aat gag agc ctt agg gtg ttg gga gag agg						490	
Asp Ser Cys Gln Glu Gly Asn Glu Ser Leu Arg Val Leu Gly Glu Arg							
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agg gga gaa agg caa caa atg ggt att tct gtc ctt tgt cct tct aat						538	
Arg Gly Glu Arg Gln Gln Met Gly Ile Ser Val Leu Cys Pro Ser Asn							
	150		155		160		
ccc ttc gcc aca gtt ctg tct tct gcc aag ttt gtg cag agc tca tta						586	
Pro Phe Ala Thr Val Leu Ser Ser Ala Lys Phe Val Gln Ser Ser Leu							
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ctc gtt gac tga aaa tttcagattc accttagttc acacatgaag tatttgcttc						641	
Leu Val Asp *							
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1509

<210> 106
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<212> DNA
<213> Homo sapiens

<220>
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<222> (781)..(942)

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 Gln Arg Asp Arg Val Asp Glu Glu Ala Leu Asn Phe Pro Tyr Glu Val
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Glu Arg Val Gly Tyr Arg Glu Gly Pro Thr Val Glu Thr Lys Arg Ile			
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75

80

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His Pro Ser Asp Glu Lys Tyr Ser Gly Leu Thr Ala Ser Ser Lys Lys
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Ser Gln Lys Gln Ile Lys Asn Ser Ser Leu Leu Ser Phe Asp Asn Glu
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Asp Glu Asn Glu *
155

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Cys Gly Trp Lys Asp Gln Leu Lys Ala His Cys Lys Glu Val Ile Lys	
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Thr Pro Lys Gly Arg Ala Leu Val Pro Asp Ser Val Lys Lys Glu Leu	
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90 95 100	

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50 55 60	
agg acg gtg aag cac ttc agc acc gag gat ggc ata ttc cag ggt cag	716
Arg Thr Val Lys His Phe Ser Thr Glu Asp Gly Ile Phe Gln Gly Gln	
65 70 75 80	
aga cac tgc ccg ggc ggc gag ggc atg ttc cgt ggc ctc gcc cag gcc	764
Arg His Cys Pro Gly Gly Glu Gly Met Phe Arg Gly Leu Ala Gln Ala	
85 90 95	
gac ggc acc ctc atc aca tgt gtg gat tct ggg att ctc aga gtc tgg	812
Asp Gly Thr Leu Ile Thr Cys Val Asp Ser Gly Ile Leu Arg Val Trp	
100 105 110	
cat gac aag gac aag gac aca tcc tct gac cca ctc ctg gaa ctg aga	860
His Asp Lys Asp Lys Asp Thr Ser Ser Asp Pro Leu Leu Glu Leu Arg	
115 120 125	
gtg ggc cct ggc gtg tgt agg atg cgc caa gac cca gca cac ccc cat	908
Val Gly Pro Gly Val Cys Arg Met Arg Gln Asp Pro Ala His Pro His	
130 135 140	
gtg gtt gcc aca ggt ggc aaa gag aat gct ttg aag ata tgg gac ctg	956
Val Val Ala Thr Gly Gly Lys Glu Asn Ala Leu Lys Ile Trp Asp Leu	
145 150 155 160	
cag ggc tct gag gaa cct gtg ttc agg gcc aag aac gtg cgg aat gac	1004
Gln Gly Ser Glu Glu Pro Val Phe Arg Ala Lys Asn Val Arg Asn Asp	
165 170 175	
tgg ctg gac ttg cgg gtt ccc atc tgg gac cag gac ata cag ttt ctc	1052
Trp Leu Asp Leu Arg Val Pro Ile Trp Asp Gln Asp Ile Gln Phe Leu	
180 185 190	
cca gga tca cag aag ctt gtc acc tgc aca ggc tac cac cag gtc cgt	1100
Pro Gly Ser Gln Lys Leu Val Thr Cys Thr Gly Tyr His Gln Val Arg	
195 200 205	
gtt tat gat cca gca tcc ccc cag cgc cgg cca gtc cta gag acc acc	1148
Val Tyr Asp Pro Ala Ser Pro Gln Arg Arg Pro Val Leu Glu Thr Thr	
210 215 220	
tat gga gag tac cca cta aca gcc atg acc ctc act ccg gga ggc aac	1196
Tyr Gly Glu Tyr Pro Leu Thr Ala Met Thr Leu Thr Pro Gly Gly Asn	
225 230 235 240	
tca gtg att gtg gga aac act cat ggg cag ctg gca gaa att gac ctt	1244
Ser Val Ile Val Gly Asn Thr His Gly Gln Leu Ala Glu Ile Asp Leu	

245	250	255	
cgg caa ggg cgt cta ctg ggc tgt ctg	aag ggg ctg gca ggc agt gtg	1292	
Arg Gln Gly Arg Leu Leu Gly Cys Leu	Lys Gly Leu Ala Gly Ser Val		
260	265	270	
cgt ggg ttg cag tgc cac cct tca aag cct	cta cta gcc tcc tgt ggc	1340	
Arg Gly Leu Gln Cys His Pro Ser Lys Pro	Leu Leu Ala Ser Cys Gly		
275	280	285	
ttg gac aga gtc ttg agg ata cac agg atc	cag aat cca cgg ggt ctg	1388	
Leu Asp Arg Val Leu Arg Ile His Arg Ile	Gln Asn Pro Arg Gly Leu		
290	295	300	
gag cat aag gtt tat ctc aag tct caa ttg	aac tgc ctc ctc ttg tca	1436	
Glu His Lys Val Tyr Leu Lys Ser Gln Leu	Asn Cys Leu Leu Leu Ser		
305	310	315	
ggc agg gac aac tgg gag gat gag ccc caa	gag cct caa gaa ccc aac	1484	
Gly Arg Asp Asn Trp Glu Asp Glu Pro Gln	Glu Pro Gln Glu Pro Asn		
325	330	335	
aag gtg ccc cta gaa gac aca gag aca gat	gaa ctt tgg gca tcc ttg	1532	
Lys Val Pro Leu Glu Asp Thr Glu Thr Asp	Glu Leu Trp Ala Ser Leu		
340	345	350	
gag gca gct gcc aag cgg aag ctc tcg ggt	ttg gag cag ccc caa gga	1580	
Glu Ala Ala Ala Lys Arg Lys Leu Ser Gly	Leu Glu Gln Pro Gln Gly		
355	360	365	
gct ctc caa acg aga cgg aga aag aag aag	cgg cct ggg tcc acc agc	1628	
Ala Leu Gln Thr Arg Arg Arg Lys Lys Lys	Arg Pro Gly Ser Thr Ser		
370	375	380	
ccc tga cgcccctgtg cccacttttgt aaataaactg	ctgaacaccc aaaaaaaaaa	1684	
Pro *			
385			
aaa		1687	

<210> 114
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 <213> Homo sapiens

<220>
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 <222> (109)..(756)

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 Met Leu Leu

caa gtt gta cga gaa ggg aag ttc tcg ggg ttt ctg acc tcc tgc agc	165
Gln Val Val Arg Glu Gly Lys Phe Ser Gly Phe Leu Thr Ser Cys Ser	
5 10 15	
ctc ctc ttg cct cgg gct gcc cag atc ttg gcg gct gag gct ggc tta	213
Leu Leu Leu Pro Arg Ala Ala Gln Ile Leu Ala Ala Glu Ala Gly Leu	
20 25 30 35	
cct tcg agc cgt tcc ttc atg gga ttt gct gct ccc ttc acc aac aag	261
Pro Ser Ser Arg Ser Phe Met Gly Phe Ala Ala Pro Phe Thr Asn Lys	
40 45 50	
cga aag gct tac tcg gag cgt aga atc atg ggg tac tca atg cag gag	309
Arg Lys Ala Tyr Ser Glu Arg Arg Ile Met Gly Tyr Ser Met Gln Glu	
55 60 65	
atg tat gag gtg gtg tcc aac gtc cag gag tat cgt gag ttt gtg ccc	357
Met Tyr Glu Val Val Ser Asn Val Gln Glu Tyr Arg Glu Phe Val Pro	
70 75 80	
tgg tgt aag aag tct ctg gtg gta tcc agc cgt aag ggt cat ttg aaa	405
Trp Cys Lys Lys Ser Leu Val Val Ser Ser Arg Lys Gly His Leu Lys	
85 90 95	
gcc cag ctg gag gtt ggc ttt cca cct gtc atg gaa cgt tac acc tct	453
Ala Gln Leu Glu Val Gly Phe Pro Pro Val Met Glu Arg Tyr Thr Ser	
100 105 110 115	
gca gtt tcc atg gtc aaa cct cac atg gtc aag gct gtt tgt act gat	501
Ala Val Ser Met Val Lys Pro His Met Val Lys Ala Val Cys Thr Asp	
120 125 130	
ggc aag ctc ttc aac cac tta gag act att tgg cga ttc agc cct ggt	549
Gly Lys Leu Phe Asn His Leu Glu Thr Ile Trp Arg Phe Ser Pro Gly	
135 140 145	
att cct gcc tat cct cga acc tgc act gtg gac ttt tcg att tcc ttt	597
Ile Pro Ala Tyr Pro Arg Thr Cys Thr Val Asp Phe Ser Ile Ser Phe	
150 155 160	
gaa ttt cgt tct ctg ctg cac tcc cag ctg gcc acc atg ttt ttt gat	645
Glu Phe Arg Ser Leu Leu His Ser Gln Leu Ala Thr Met Phe Phe Asp	
165 170 175	
gag gtt gtc aaa cag aat gtt gct gcc ttt gag cgt cgg gca gcc acc	693
Glu Val Val Lys Gln Asn Val Ala Ala Phe Glu Arg Arg Ala Ala Thr	
180 185 190 195	
aag ttt ggt cca gaa aca gcc atc ccc cgt gaa ctg atg ttc cat gag	741
Lys Phe Gly Pro Glu Thr Ala Ile Pro Arg Glu Leu Met Phe His Glu	
200 205 210	
gtg cac cag act tga ggcaagggat tgctccctga cctcccttct accccacttc	796
Val His Gln Thr *	
215	

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cctacacaat tctcttattt atttggtttg gctcctgttc caatttgaaa ggagtctgtg      856
ttcataatac tgtttctcct ctcaatttcc cagaaattgg gttctatgct ggctggaaat      916
gttgggggaa agagaaggca aaggatgtgg aaatgagatg tgcttaggaa agggtcaggc      976
ccatcgtagg agcaccatat gcctgcagcc ttttcactac gaattagaat aaggactatg     1036
tggttgtctc tggaccttat caagacacct tagtgtctga ccaggggacg atagtaactt     1096
ttctaaggat tgaataaatt gagcttttct tctggcacag aggtactgag tggttaagtaa     1156
cttttacctt gcctgagatt cctcaggaga aaaggcaacc tgcctccagc ctgaaataca     1216
taaagcctca ttttaagact gtaagtccat gctgcctggc tactagagag caaggggctt     1276
tcttaccacc agtgctgagg agaaaagtac tgaacggaaa cggagttgtc tttgtactct     1336
tgagttgtac cttattcttc cacttggcct gagtttttat aaaatttcaa taaattgtga     1396
cagtgtgaaa aaaaaaaaaa                                     1416

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<210> 115
<211> 1008
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (392)..(736)

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accagcact ttgagaggcc aagggtgggag gatcacctga gggcaagagt tcaagaccag     120
cctgaccaac atggagaaac cccatctcta cttaaaaaaa aaaaaatacg aatttaccca     180
ggcatggtgg tgggcacctg taatcccagc tactcgggag actgagggcg gagattctct     240
tgaacctggg aggcagaggt tgcggtgagc cgagatcgtg ccattgcact ccagcctggg     300
caacaagagc aaaactccat ctcaaaaaga aaaaagaaag aaagaaatgc taggggaaaa     360
tgttttaact agtcattctt cccagtagct a    atg aag ctg act ttt aaa aag      412
                               Met Lys Leu Thr Phe Lys Lys
                               1                    5

aag gct gtg agc ttt gca gat gct gct gcc gcc cag ggc ccc ctg ctt      460
Lys Ala Val Ser Phe Ala Asp Ala Ala Ala Ala Gln Gly Pro Leu Leu
      10                    15                    20

cca gcc atg gtc aac ccc acc atg ttt ttc cac att gct gtc gat ggc      508

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gtg tgt gcc aag tgt ggc tat gag ctg ttc tcc agc cgc tcg aag tat	270
Val Cys Ala Lys Cys Gly Tyr Glu Leu Phe Ser Ser Arg Ser Lys Tyr	
25 30 35	
gca cac tcg tct cca tgg ccg gcg ttc acc gag acc att cac gcc gac	318
Ala His Ser Ser Pro Trp Pro Ala Phe Thr Glu Thr Ile His Ala Asp	
40 45 50	
agc gtg gcc aag cgt ccg gag cac aat aga tct gaa gcc ttg aag gtg	366
Ser Val Ala Lys Arg Pro Glu His Asn Arg Ser Glu Ala Leu Lys Val	
55 60 65	
tcc tgt ggc aag tgt ggc aat ggg ttg ggc cac gag ttc ctg aac gac	414
Ser Cys Gly Lys Cys Gly Asn Gly Leu Gly His Glu Phe Leu Asn Asp	
70 75 80 85	
ggc ccc aag ccg ggg cag tcc cga ttc tga a tattcagcag ctcgctgaag	465
Gly Pro Lys Pro Gly Gln Ser Arg Phe *	
90 95	
tttgtcccta aaggcaaaga aacttctgcc tcccagggtc actaggcggg cagcccacac	525
ccaccccaga cggccaccac actgaggcca cacgttggcc attccacctt ggagttggaa	585
ccctgggcgt cgagacagga aggcagggcg cagtgggtga aacatcagga cactcccaag	645
gccccggctc tgaacaagac cttttcgttt cttggaaaag agactcattt gctgatggtt	705
catgccttct gctgggacag gcctgggctg tgcagccaca ctgtcggctg acttagcccc	765
ctgctcactc taggtgcctc caggaggtga gccctgggtg cagctggtct ctgaatgacg	825
ttacaccctc accttctttt cctggccctg tctctgggac tctcccctgt gaggcccaat	885
tccaagacag actctcgtcc tcaccgaagc ttaggcccac atctcccagg ctgcttagga	945
gacagaatgg aaacggaggc cgccttgcc agccgccctg gccctggtca ctgcatgac	1005
cgctctggtc aaacccttcc aggccagcca gagtggggat ggtctgtgac ctgctgggaa	1065
ggcaggctga tggggcacac ccttggcctc tcgtccacga ggggagaaac ctaaaccctg	1125
tttcacaatc tgtgcggaag tagcttgctt cacttctgct taggaaagcg gctgttgctc	1185
cataactcta accagcacag ggctgaggcc tgcagtgcac acctgcaggg aggcccttcc	1245
caaggtgtgg tgactgtgcc ttactgtaca tgctcggagg cctggccata taggaggggtg	1305
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tccatagaca aatg	1379

<210> 117

<211> 2179
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> CDS
 <222> (70)..(1827)

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aaagatcca      atg gaa atg cgc ctc cct att cgt agc cct att aaa cga      108
                Met Glu Met Arg Leu Pro Ile Arg Ser Pro Ile Lys Arg
                1              5              10

gac ttt tta tca gga att cag att gaa ttt aag cag tct tct cac cag      156
Asp Phe Leu Ser Gly Ile Gln Ile Glu Phe Lys Gln Ser Ser His Gln
    15              20              25

aga agt tta agg gcc agg ttg tac tgg ctt cag gtt gat aat cag tta      204
Arg Ser Leu Arg Ala Arg Leu Tyr Trp Leu Gln Val Asp Asn Gln Leu
    30              35              40              45

cca ggt gca atg ttc cct gtt gta ttt cat cct gtt gcc cct cca aaa      252
Pro Gly Ala Met Phe Pro Val Val Phe His Pro Val Ala Pro Pro Lys
                50              55              60

tct att gct tta gat tca gag ccc aag cct ttc att gat gtg agt gtc      300
Ser Ile Ala Leu Asp Ser Glu Pro Lys Pro Phe Ile Asp Val Ser Val
    65              70              75

atc aca aga ttt aat gag tac agt aaa gtc tta cag ttc aag tat ttt      348
Ile Thr Arg Phe Asn Glu Tyr Ser Lys Val Leu Gln Phe Lys Tyr Phe
    80              85              90

atg gtc ctc att cag gaa atg gcc tta aaa att gat caa ggg ttt cta      396
Met Val Leu Ile Gln Glu Met Ala Leu Lys Ile Asp Gln Gly Phe Leu
    95              100             105

gga gct att att gca ctg ttt acc cca aca aca gac cct gaa gct gaa      444
Gly Ala Ile Ile Ala Leu Phe Thr Pro Thr Thr Asp Pro Glu Ala Glu
   110              115              120              125

aga aga cgg aca aag tta atc caa caa gat att gat gct cta aat gca      492
Arg Arg Arg Thr Lys Leu Ile Gln Gln Asp Ile Asp Ala Leu Asn Ala
                130              135              140

gaa tta atg gag act tca atg act gat atg tca att ctt agt ttc ttt      540
Glu Leu Met Glu Thr Ser Met Thr Asp Met Ser Ile Leu Ser Phe Phe
                145              150              155

gaa cat ttc cat att tct cct gtg aag ttg cat ttg agt ttg tct ttg      588
Glu His Phe His Ile Ser Pro Val Lys Leu His Leu Ser Leu Ser Leu
    160              165              170

ggt tcc gga ggt gaa gaa tca gac aaa gaa aaa cag gaa atg ttt gca      636
Gly Ser Gly Gly Glu Glu Ser Asp Lys Glu Lys Gln Glu Met Phe Ala

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175	180	185	
gtt cat tct gtc aac ttg ctg ttg aaa agc ata ggt gct act ctg act			684
Val His Ser Val Asn Leu Leu Leu Lys Ser Ile Gly Ala Thr Leu Thr			
190	195	200	205
gat gtg gat gac ctt ata ttc aaa ctt gct tat tat gaa att cga tat			732
Asp Val Asp Asp Leu Ile Phe Lys Leu Ala Tyr Tyr Glu Ile Arg Tyr			
	210	215	220
cag ttc tac aag aga gat cag ctt ata tgg agt gtt gtt agg cat tac			780
Gln Phe Tyr Lys Arg Asp Gln Leu Ile Trp Ser Val Val Arg His Tyr			
	225	230	235
agt gaa cag ttc ttg aaa cag atg tat gtc ctt gta ttg ggg tta gat			828
Ser Glu Gln Phe Leu Lys Gln Met Tyr Val Leu Val Leu Gly Leu Asp			
	240	245	250
gta ctt gga aac cca ttt gga tta att aga ggt ctg tct gaa gga gtt			876
Val Leu Gly Asn Pro Phe Gly Leu Ile Arg Gly Leu Ser Glu Gly Val			
	255	260	265
gaa gct tta ttc tat gaa ccc ttc cag ggt gct gtt caa ggc cct gaa			924
Glu Ala Leu Phe Tyr Glu Pro Phe Gln Gly Ala Val Gln Gly Pro Glu			
	270	275	280
gaa ttt gca gag ggg tta gtg att gga gtg aga agc ctc ttt gga cac			972
Glu Phe Ala Glu Gly Leu Val Ile Gly Val Arg Ser Leu Phe Gly His			
	290	295	300
aca gta ggt ggt gca gca gga gtt gta tct cga atc acc ggt tct gtt			1020
Thr Val Gly Gly Ala Ala Gly Val Val Ser Arg Ile Thr Gly Ser Val			
	305	310	315
ggg aaa ggt ttg gca gca att aca atg gac aag gaa tat cag caa aaa			1068
Gly Lys Gly Leu Ala Ala Ile Thr Met Asp Lys Glu Tyr Gln Gln Lys			
	320	325	330
aga aga gaa gag ttg agt cga cag ccc aga gat ttt gga gac agc ctg			1116
Arg Arg Glu Glu Leu Ser Arg Gln Pro Arg Asp Phe Gly Asp Ser Leu			
	335	340	345
gcc aga gga gga aag ggc ttt ctg cga gga gtt gtt ggt gga gtg act			1164
Ala Arg Gly Gly Lys Gly Phe Leu Arg Gly Val Val Gly Gly Val Thr			
	350	355	360
gga ata ata aca aaa cct gtg gaa ggt gcc aaa aag gaa gga gct gct			1212
Gly Ile Ile Thr Lys Pro Val Glu Gly Ala Lys Lys Glu Gly Ala Ala			
	370	375	380
gga ttc ttt aaa gga att gga aaa ggg ctt gtg ggt gct gtg gcc cgt			1260
Gly Phe Phe Lys Gly Ile Gly Lys Gly Leu Val Gly Ala Val Ala Arg			
	385	390	395
cca act ggt gga atc gta gat atg gcc agt agt acc ttc caa ggc att			1308
Pro Thr Gly Gly Ile Val Asp Met Ala Ser Ser Thr Phe Gln Gly Ile			
	400	405	410

cag agg gca gca gaa tca act gag gaa gta tct agc ctc cgt ccc cct Gln Arg Ala Ala Glu Ser Thr Glu Glu Val Ser Ser Leu Arg Pro Pro 415 420 425	1356
cgc ctg atc cat gaa gat ggc atc att cgt cct tat gac aga cag gaa Arg Leu Ile His Glu Asp Gly Ile Ile Arg Pro Tyr Asp Arg Gln Glu 430 435 440 445	1404
tct gag ggc tct gac tta ctt gag aat cat atc aaa aag ttg gaa gga Ser Glu Gly Ser Asp Leu Leu Glu Asn His Ile Lys Lys Leu Glu Gly 450 455 460	1452
gag act tac cga tac cac tgt gct att cct gga agc aag aag aca atc Glu Thr Tyr Arg Tyr His Cys Ala Ile Pro Gly Ser Lys Lys Thr Ile 465 470 475	1500
ctt atg gtt aca aat agg cga gtg ttg tgt ata aag gaa gtt gaa atc Leu Met Val Thr Asn Arg Arg Val Leu Cys Ile Lys Glu Val Glu Ile 480 485 490	1548
ctg ggc ctt atg tgt gta gac tgg caa tgt cca ttt gaa gat ttt gta Leu Gly Leu Met Cys Val Asp Trp Gln Cys Pro Phe Glu Asp Phe Val 495 500 505	1596
ttt cct cct agt gtc agt gaa aat gtg cta aaa att tca gtt aag gaa Phe Pro Pro Ser Val Ser Glu Asn Val Leu Lys Ile Ser Val Lys Glu 510 515 520 525	1644
cag ggt ctg ttc cac aaa aaa gac agt gcc aat caa ggc tgt gtt cga Gln Gly Leu Phe His Lys Lys Asp Ser Ala Asn Gln Gly Cys Val Arg 530 535 540	1692
aaa gtt tac ctg aag gac acc gcc aca gca gag aga gca tgt aat gcc Lys Val Tyr Leu Lys Asp Thr Ala Thr Ala Glu Arg Ala Cys Asn Ala 545 550 555	1740
att gag gat gca cag tca acg aga cag cag caa aaa ttg atg aag cag Ile Glu Asp Ala Gln Ser Thr Arg Gln Gln Gln Lys Leu Met Lys Gln 560 565 570	1788
tca tca gtg aga ctt ctc aga ccc caa ttg cca tct taa tcacagacct Ser Ser Val Arg Leu Leu Arg Pro Gln Leu Pro Ser *	1837
575 580 585	
caggggctcc aacagggaga aaaaacaatc actggtcttg tctataagtc actctgcttt	1897
atcttgctaa agacaatttt tcaagcaatc ctttagtttt agttttctgg aatagctagt	1957
attgggtttt ctagtgtttt caccttttag tttttactct aattttgtaa ccatgtatat	2017
gctagcagtc cacttctacg ccaccacca aatgggtcag acccttgaag aaacgtcact	2077
tcaaactcag aatgaaattt tcattaatat taaaattgtg aagcaaaggt caataggctt	2137
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 <211> 3168
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (330)..(1652)

<400> 118

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cccagggtcat gcacacagcc agcagtgaca catccaatgg gacactccag gatgaaacct      180
gagaaaggag gtctgggata tgggatattg taatgggaga gcaggaaatt taaggtcgga      240
ggatatttgtt taggatacct cagtattcta gagctatggg atttattttg ctttgaagtc      300
cagaggtatt tagctttatt ctaaaagcg  atg aag ttc ctc tta att aaa gac      353
                               Met Lys Phe Leu Leu Ile Lys Asp
                               1                               5

gct cct gga aaa aaa aaa agg aaa aat tta atg ctg tct ttt aaa agg      401
Ala Pro Gly Lys Lys Lys Arg Lys Asn Leu Met Leu Ser Phe Lys Arg
      10                               15                               20

aaa cat gcc aaa ggc cag gat ttg ttt gat cag att gtg tac cac ttg      449
Lys His Ala Lys Gly Gln Asp Leu Phe Asp Gln Ile Val Tyr His Leu
      25                               30                               35                               40

gac ctt gtg gaa aca gat tac ttt ggc ctc cag ttc ctc gac tct gcc      497
Asp Leu Val Glu Thr Asp Tyr Phe Gly Leu Gln Phe Leu Asp Ser Ala
                               45                               50                               55

cag gtt gcg cac tgg ctg gat cat gcc aaa ccc ata aaa aag cag atg      545
Gln Val Ala His Trp Leu Asp His Ala Lys Pro Ile Lys Lys Gln Met
                               60                               65                               70

aaa att gga cct gct tat gct tta cac ttt cga gtt aaa tac tat tct      593
Lys Ile Gly Pro Ala Tyr Ala Leu His Phe Arg Val Lys Tyr Tyr Ser
      75                               80                               85

tca gaa cca aac aac ctt cgt gag gag ttt aca agg tac ctg ttt gtt      641
Ser Glu Pro Asn Asn Leu Arg Glu Glu Phe Thr Arg Tyr Leu Phe Val
      90                               95                               100

tta caa ctc agg cat gac att ctt tct gga aaa ttg aaa tgc cct tat      689
Leu Gln Leu Arg His Asp Ile Leu Ser Gly Lys Leu Lys Cys Pro Tyr
      105                               110                               115                               120

gaa aca gct gtg gaa tta gct gct ctc tgt cta caa gcg gag ctt ggg      737
Glu Thr Ala Val Glu Leu Ala Ala Leu Cys Leu Gln Ala Glu Leu Gly

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				125				130				135							
gag	tgc	gag	ctt	cca	gaa	cac	aca	cca	gag	ctt	gtg	tct	gag	ttt	cgg	785			
Glu	Cys	Glu	Leu	Pro	Glu	His	Thr	Pro	Glu	Leu	Val	Ser	Glu	Phe	Arg				
140								145				150							
ttc	att	cca	aat	cag	aca	gaa	gca	atg	gaa	ttt	gat	atc	ttc	cag	aga	833			
Phe	Ile	Pro	Asn	Gln	Thr	Glu	Ala	Met	Glu	Phe	Asp	Ile	Phe	Gln	Arg				
155								160				165							
tgg	aaa	gag	tgc	agg	gga	aag	agc	cct	gcc	cag	gcg	gaa	ctc	tcc	tat	881			
Trp	Lys	Glu	Cys	Arg	Gly	Lys	Ser	Pro	Ala	Gln	Ala	Glu	Leu	Ser	Tyr				
170								175				180							
ctg	aat	aaa	gcg	aag	tgg	ctg	gaa	atg	tat	ggg	gta	gac	atg	cac	gtt	929			
Leu	Asn	Lys	Ala	Lys	Trp	Leu	Glu	Met	Tyr	Gly	Val	Asp	Met	His	Val				
185								190				195				200			
gtc	agg	gga	aga	gat	ggc	tgt	gaa	tat	tct	ctt	gga	ctg	acc	ccg	aca	977			
Val	Arg	Gly	Arg	Asp	Gly	Cys	Glu	Tyr	Ser	Leu	Gly	Leu	Thr	Pro	Thr				
				205								210				215			
ggc	ata	tta	atc	ttt	gaa	gga	gct	aac	aaa	ata	ggc	tta	ttc	ttt	tgg	1025			
Gly	Ile	Leu	Ile	Phe	Glu	Gly	Ala	Asn	Lys	Ile	Gly	Leu	Phe	Phe	Trp				
				220								225				230			
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Pro	Lys	Ile	Thr	Lys	Met	Asp	Phe	Lys	Lys	Ser	Lys	Leu	Thr	Leu	Val				
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gtg	gtc	gag	gat	gat	gat	cag	gga	cgt	gag	caa	gag	cac	acg	ttt	gtg	1121			
Val	Val	Glu	Asp	Asp	Asp	Gln	Gly	Arg	Glu	Gln	Glu	His	Thr	Phe	Val				
				250								255				260			
ttc	cgg	tta	gac	agt	gcc	agg	acc	tgc	aaa	cac	ctt	tgg	aag	tgt	gca	1169			
Phe	Arg	Leu	Asp	Ser	Ala	Arg	Thr	Cys	Lys	His	Leu	Trp	Lys	Cys	Ala				
265												270				275			
gtt	gag	cac	cac	gca	ttc	ttc	cga	ctg	cgg	acg	cca	gga	aac	agc	aaa	1217			
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tcc	aat	aga	tcc	gac	ttt	atc	agg	ctg	ggc	tct	cgc	ttc	aga	ttc	agt	1265			
Ser	Asn	Arg	Ser	Asp	Phe	Ile	Arg	Leu	Gly	Ser	Arg	Phe	Arg	Phe	Ser				
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Gly	Arg	Thr	Glu	Tyr	Gln	Ala	Thr	His	Gly	Ser	Arg	Leu	Arg	Arg	Thr				
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Ser	Thr	Phe	Glu	Arg	Lys	Pro	Ser	Lys	Arg	Tyr	Pro	Ser	Arg	Arg	His				
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Ile His Pro Ser Gln Pro Arg Trp His Pro His Ser Pro Asn Val Arg	
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Pro Ser Phe Gln Asp Asp Arg Ser His Trp Lys Ala Ser Ala Ser Gly	
395 400 405	
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Asp Asp Ser His Phe Asp Tyr Val His Asp Gln Asn Gln Lys Asn Leu	
410 415 420	
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Gly Gly Met Gln Ser Met Met Tyr Arg Asp Lys Leu Met Thr Ala Leu	
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 ttccaaatta tattggtggt catcagaagt aggtgatagg aagaaatact tctcaagggt 240
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 Met Gln Ser Asn Lys Thr Phe Asn Leu Glu Lys Gln Asn His
 1 5 10
 act cca aga aag cat cat caa cat cac cac cag cag cag cac cac cag 336
 Thr Pro Arg Lys His His Gln His His His Gln Gln Gln His His Gln
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 Gln Gln Gln Gln Gln Pro Pro Pro Pro Pro Ile Pro Ala Asn Gly Gln
 35 40 45
 cag gcc agc agc caa agt gtg tat atg cta gat gaa ggc ttg act att 432
 Gln Ala Ser Ser Gln Ser Val Tyr Met Leu Asp Glu Gly Leu Thr Ile
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 Asp Leu Lys Asn Phe Arg Lys Pro Gly Glu Lys Thr Phe Thr Gln Arg

65	70	75	
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cat aag gat aaa gga ttt ggc ttt atc cgc ttg gaa acc cga acc cta His Lys Asp Lys Gly Phe Gly Phe Ile Arg Leu Glu Thr Arg Thr Leu 115 120 125			624
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cag ctg cgt gtg cgc ttt gcc tgc cat agt gca tcc ctt aca gtt cga Gln Leu Arg Val Arg Phe Ala Cys His Ser Ala Ser Leu Thr Val Arg 145 150 155			720
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gtg ttt ggc cag gta gag agg gct gta gtc att gtg gat gat cga gga Val Phe Gly Gln Val Glu Arg Ala Val Val Ile Val Asp Asp Arg Gly 175 180 185 190			816
agg ccc tca gga aaa ggc att gtt gag ttc tca ggg aag cca gct gct Arg Pro Ser Gly Lys Gly Ile Val Glu Phe Ser Gly Lys Pro Ala Ala 195 200 205			864
cgg aaa gct ctg gac aga tgc agt gaa ggc tcc ttc ctg cta acc aca Arg Lys Ala Leu Asp Arg Cys Ser Glu Gly Ser Phe Leu Leu Thr Thr 210 215 220			912
ttt cct cgt cct gtg act gtg gag ccc atg gac cag tta gat gat gaa Phe Pro Arg Pro Val Thr Val Glu Pro Met Asp Gln Leu Asp Asp Glu 225 230 235			960
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<400> 120

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Gly Gly Leu Pro Ser Arg Arg Lys Ser Leu Pro Ser Pro Ser Leu Ser		
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Ser Ser Val Gln Gly Gln Gly Pro Val Thr Met Glu Ala Glu Arg Ser		
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Lys Ala Thr Ala Val Ala Leu Gly Ser Phe Pro Ala Gly Gly Pro Ala		
35 40 45		
gag ctg tcg ctg aga ctc ggg gag cca ttg acc atc gtc tct gag gat		248
Glu Leu Ser Leu Arg Leu Gly Glu Pro Leu Thr Ile Val Ser Glu Asp		
50 55 60 65		
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Gly Asp Trp Trp Thr Val Leu Ser Glu Val Ser Gly Arg Glu Tyr Asn		
70 75 80		
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Ile Pro Ser Val His Val Ala Lys Val Ser His Gly Trp Leu Tyr Glu		
85 90 95		
ggc ctg agc agg gag aaa gca gag gaa ctg ctg ttg tta cct ggg aac		392
Gly Leu Ser Arg Glu Lys Ala Glu Glu Leu Leu Leu Pro Gly Asn		
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Pro Gly Gly Ala Phe Leu Ile Arg Glu Ser Gln Thr Arg Arg Gly Ser		
115 120 125		
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Tyr Ser Leu Ser Val Arg Leu Ser Arg Pro Ala Ser Trp Asp Arg Ile		
130 135 140 145		
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Arg His Tyr Arg Ile His Cys Leu Asp Asn Gly Trp Leu Tyr Ile Ser		
150 155 160		
ccg cgc ctc acc ttc ccc tca ctc cag gcc ctg ggg gac cat tac tct		584
Pro Arg Leu Thr Phe Pro Ser Leu Gln Ala Leu Gly Asp His Tyr Ser		
165 170 175		

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Glu Gly Trp Pro Ala Pro Trp Gln Gly Tyr Thr Pro Thr Cys Asp Cys	
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Ala Glu Asp Thr Thr Gln Leu Glu Arg Ala Gly Gln Leu Pro Pro Val	
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Phe *	
210	
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gctactctcc gggagggggcg cttcccgcag ccaagacaaa agg atg cca cgg aga	175
Met Pro Arg Arg	

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gat Asp	gtg Val	gaa Glu	act Thr	acc Thr 25	agt Ser	tct Ser	gtc Val	agt Ser	gtg Val 30	aag Lys 15	agg Arg	aag Lys	cgt Arg	aga Arg 35	ctt Leu	271
gag Glu	gat Asp	gca Ala	ttc Phe 40	att Ile	gtg Val	ata Ile	tcc Ser	gat Asp 45	agt Ser	gat Asp	gga Gly	gag Glu	gaa Glu 50	cca Pro	aag Lys	319
gag Glu	gaa Glu	aat Asn 55	ggg Gly	ttg Leu	cag Gln	aaa Lys	acg Thr 60	aag Lys	aca Thr	aaa Lys	cag Gln	tcg Ser 65	aat Asn	aga Arg	gca Ala	367
aag Lys 70	tgt Cys	ttg Leu	gcc Ala	aaa Lys	aga Arg	aaa Lys 75	att Ile	gca Ala	cag Gln	atg Met	aca Thr 80	gaa Glu	gaa Glu	gaa Glu	cag Gln	415
ttt Phe 85	gct Ala	ctg Leu	gct Ala	ctc Leu	aaa Lys 90	atg Met	agt Ser	gag Glu	cag Gln	gaa Glu 95	gct Ala	agg Arg	gag Glu	gtg Val 100	aac Asn	463
agc Ser	cag Gln	gag Glu	gag Glu	gaa Glu 105	gaa Glu	gag Glu	gag Glu	ctc Leu	ttg Leu 110	agg Arg	aaa Lys	gcc Ala	att Ile	gct Ala 115	gaa Glu	511
agc Ser	ctg Leu	aat Asn 120	agt Ser	tgc Cys	cgg Arg	cct Pro	tct Ser	gat Asp 125	gct Ala	tcc Ser	gct Ala	acc Thr 130	aga Arg	tct Ser	cga Arg	559
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gac Asp 150	tct Ser	ggg Gly	ctc Leu	act Thr	gaa Glu	ggc Gly 155	ata Ile	tgg Trp	cag Gln	ctg Leu	gta Val 160	cct Pro	cca Pro	tca Ser	ctg Leu	655
ttt Phe 165	aaa Lys	ggc Gly	tca Ser	cat His	atc Ile 170	agt Ser	cag Gln	gga Gly	aac Asn	gag Glu 175	gct Ala	gag Glu	gaa Glu	aga Arg	gag Glu 180	703
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Lys Ala Val Gln Gly Ser Gly Asp Thr Ser Arg His Cys Leu Pro Thr	
245 250 255 260	
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Leu Ala Asp Ala Lys Gly Leu Gln Asp Thr Gly Gly Thr Val Asn Tyr	
265 270 275	
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Phe Trp Gly Ile Pro Phe Cys Pro Asp Gly Val Asp Pro Asn Gln Tyr	
280 285 290	
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Thr Lys Val Ile Leu Cys Gln Leu Glu Val Tyr Gln Lys Ser Leu Lys	
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Leu Pro Arg Pro Pro Ser Leu Ile Gln Asn Glu Cys Gly Gln Gly Glu	
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Gln Ala Ser Glu Lys Asn Glu Cys Ile Ser Glu Asp Met Gly Asp Glu	
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gac aaa gag gag agg cag gag tct agg gca tct gac tgg cac tca aaa	1279
Asp Lys Glu Glu Arg Gln Glu Ser Arg Ala Ser Asp Trp His Ser Lys	
360 365 370	
acc aag gat ttc cag gaa agc tca att aaa agc ttg aaa gag aaa ctt	1327
Thr Lys Asp Phe Gln Glu Ser Ser Ile Lys Ser Leu Lys Glu Lys Leu	
375 380 385	
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Leu Leu Glu Glu Glu Pro Thr Thr Ser His Gly Gln Ser Ser Gln Gly	
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Ile Val Glu Glu Thr Ser Glu Glu Gly Asn Ser Val Pro Ala Ser Gln	
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Thr Lys Ala Gly Arg Gly Arg Arg Arg Lys Phe *
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cctgcgcaca gtcgcgcca cccctccctg cctccttttc ttctcagcgc ggtccgcggc      180
ccgctactct ccgggagggg cgcttcccga cgccaagaca aaaggatgcc acggagaaaag      240
aaaaaagtta aagaagtctc cgaatctcgg aacctggaga agaaggatgt ggaaactacc      300
agttctgtca gtgtgaagag gaagcgtaga cttgaggatg cattcattgt gatatccgat      360
agtgatggag aggaaccaa ggaggaaaat gggttgcaga aaacgaagac aaaacagtcg      420
aatagagcaa agtgtttggc caaaagaaaa atcgcacaga tgacagaaga agaacagttt      480
gctctggctc tcaaaatgag tgagcaggaa gctagggagg tgaacagcca ggaggaggaa      540
gaagaggagc tcttgaggaa agccattgct gaaagcctga atagttgccg gccttctg      598
atg ctt ccg cta cca gat ctc gac ctc tgg cca ctg gac cgt ctt ccc      646
Met Leu Pro Leu Pro Asp Leu Asp Leu Trp Pro Leu Asp Arg Leu Pro
  1              5              10              15

agt ccc atc aag aga aaa cca cag act ctg ggc tca ctg aag tct tcc      694
Ser Pro Ile Lys Arg Lys Pro Gln Thr Leu Gly Ser Leu Lys Ser Ser
      20              25              30

```

caa ggg att gtt gaa gaa act tct gaa gag gga aac tct gta cct gct Gln Gly Ile Val Glu Glu Thr Ser Glu Glu Gly Asn Ser Val Pro Ala 35 40 45	742
tca caa agt gtt gct gct ttg acc agt aag aga agc tta gtc ctt atg Ser Gln Ser Val Ala Ala Leu Thr Ser Lys Arg Ser Leu Val Leu Met 50 55 60	790
cca gag agt tct gca gaa gaa atc act gtt tgt cct gag acc cag cta Pro Glu Ser Ser Ala Glu Glu Ile Thr Val Cys Pro Glu Thr Gln Leu 65 70 75 80	838
agt tcc tct gaa act ttt gac ctt gaa aga gaa gtc tct cca ggt agc Ser Ser Ser Glu Thr Phe Asp Leu Glu Arg Glu Val Ser Pro Gly Ser 85 90 95	886
aga gat atc ttg gat gga gtc aga ata ata atg gca gat aag gag gtt Arg Asp Ile Leu Asp Gly Val Arg Ile Ile Met Ala Asp Lys Glu Val 100 105 110	934
ggt aac aag gaa gat gct gag aag gaa gta gct att tct acc ttc tca Gly Asn Lys Glu Asp Ala Glu Lys Glu Val Ala Ile Ser Thr Phe Ser 115 120 125	982
tcc agt aac cag gta tcc tgc ccg cta tgt gac caa tgc ttt cca ccc Ser Ser Asn Gln Val Ser Cys Pro Leu Cys Asp Gln Cys Phe Pro Pro 130 135 140	1030
aca aag att gaa cga cat gcc atg tac tgc aat ggt ctg atg gag gaa Thr Lys Ile Glu Arg His Ala Met Tyr Cys Asn Gly Leu Met Glu Glu 145 150 155 160	1078
gat aca gta ttg act cgg aga caa aaa gag gcc aag acc aag agt gac Asp Thr Val Leu Thr Arg Arg Gln Lys Glu Ala Lys Thr Lys Ser Asp 165 170 175	1126
agt ggg aca gct gcc cag act tct cta gac att gac aag aat gag aag Ser Gly Thr Ala Ala Gln Thr Ser Leu Asp Ile Asp Lys Asn Glu Lys 180 185 190	1174
tgt tac ctc tgt aaa tcc ctg gtc cca ttt aga gag tat cag tgt cat Cys Tyr Leu Cys Lys Ser Leu Val Pro Phe Arg Glu Tyr Gln Cys His 195 200 205	1222
gtg gac tcc tgt ctc cag ctt gca aag gct gac caa gga gat gga cct Val Asp Ser Cys Leu Gln Leu Ala Lys Ala Asp Gln Gly Asp Gly Pro 210 215 220	1270
gaa ggg agt gga aga gca tgt tca act gtg gag ggg aag tgg cag cag Glu Gly Ser Gly Arg Ala Cys Ser Thr Val Glu Gly Lys Trp Gln Gln 225 230 235 240	1318
agg ctg aag aac cca aag gaa aaa ggc cac agt gaa ggc cga ctc ctt Arg Leu Lys Asn Pro Lys Glu Lys Gly His Ser Glu Gly Arg Leu Leu 245 250 255	1366
agt ttc ttg gaa cag tct gag cac aag act tca gat gca gac atc aag	1414

Ser Phe Leu Glu Gln Ser Glu His Lys Thr Ser Asp Ala Asp Ile Lys	
260 265 270	
tct tca gaa aca gga gcc ttc agg gtg cct tca cca ggg atg gaa gag	1462
Ser Ser Glu Thr Gly Ala Phe Arg Val Pro Ser Pro Gly Met Glu Glu	
275 280 285	
gca ggc tgc agc aga gag atg cag agt tct ttc aca cgt cgt gac tta	1510
Ala Gly Cys Ser Arg Glu Met Gln Ser Ser Phe Thr Arg Arg Asp Leu	
290 295 300	
aat gaa tct ccc gtc aag tct ttt gtt tcc att tca gaa gcc aca gat	1558
Asn Glu Ser Pro Val Lys Ser Phe Val Ser Ile Ser Glu Ala Thr Asp	
305 310 315 320	
tgc tta gtg gac ttt aaa aag caa gtt act gtc cag cca ggt agt cgg	1606
Cys Leu Val Asp Phe Lys Lys Gln Val Thr Val Gln Pro Gly Ser Arg	
325 330 335	
aca cgg acc aaa gct ggc aga gga aga agg aga aaa ttc tga atttcta	1655
Thr Arg Thr Lys Ala Gly Arg Gly Arg Arg Arg Lys Phe *	
340 345 350	
gggtccaaaa gttgacaaaa ccattagtag gaggggtggg ccatgttcat taagccatag	1715
tggtccctag ttcattgttg agcaagtttt agccctgcag ttttcaccac cagcacctac	1775
ccagcattct gggttttatg ttttttatga tctatgcaga caactgtgta ttctgtttta	1835
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<210> 123
 <211> 2288
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (208)..(663)

<220>
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tgtgtgtttg tgtgtgtgtg tgcactcaag acctctaaca gcctcgaagc ctgggggtggc	180
atccccggcct tgccattagc atgcctc atg cat cat cag atg aca agg aca	231
Met His His Gln Met Thr Arg Thr	

	1	5	
acc ctc atg acg aag caa cat gaa tta ggg ggc ctc ttg gcc ttg gtc			279
Thr Leu Met Thr Lys Gln His Glu Leu Gly Gly Leu Leu Ala Leu Val			
10 15 20			
caa aat tgt caa tca gaa atg aac ata aag gac tcc aga gca gtg gga			327
Gln Asn Cys Gln Ser Glu Met Asn Ile Lys Asp Ser Arg Ala Val Gly			
25 30 35 40			
ctg tct gtc aaa aga ctc tgt ata tct ttt gtg gat gag ttt tgt gag			375
Leu Ser Val Lys Arg Leu Cys Ile Ser Phe Val Asp Glu Phe Cys Glu			
45 50 55			
aga aca gag aga cca ttg tac ctg gca caa ggg ctc ttc atg aaa agg			423
Arg Thr Glu Arg Pro Leu Tyr Leu Ala Gln Gly Leu Phe Met Lys Arg			
60 65 70			
gag act tac tgg gag gtg caa gac agt ggc att tct cct ctc ctc ttg			471
Glu Thr Tyr Trp Glu Val Gln Asp Ser Gly Ile Ser Pro Leu Leu Leu			
75 80 85			
ctg ctc agc aca gcc ctg gat tgc agc ccc gag gct gag acc aga caa			519
Leu Leu Ser Thr Ala Leu Asp Cys Ser Pro Glu Ala Glu Thr Arg Gln			
90 95 100			
agc ccg gga ggc aga aag atg ctc caa gaa cca aca cta tca atg tct			567
Ser Pro Gly Gly Arg Lys Met Leu Gln Glu Pro Thr Leu Ser Met Ser			
105 110 115 120			
ttg caa atc ctc aca gga ttc ctg tgg gtc cag ctt tgg aac tgg gaa			615
Leu Gln Ile Leu Thr Gly Phe Leu Trp Val Gln Leu Trp Asn Trp Glu			
125 130 135			
acc ttt ctt cgg atc cgc act cat tcc act gat gcc agc tgc ccc tga			663
Thr Phe Leu Arg Ile Arg Thr His Ser Thr Asp Ala Ser Cys Pro *			
140 145 150			
aggatgccag tactgtggtg tgtgagtctc agcagccgcc cacacgctcc taactctgct			723
gcatggcaga tgcctaggtg gaaatagcaa aaacaaggcc caggctgggg ccagggccag			783
aggggaaggc cctggattct cactcatgtg agatcttgaa tctctttctt tgttctgttt			843
gtttagttag tatcatctgg taaaatagtt aaaaaacaac aaaaaactct gtatctgttt			903
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tcttcactag cctctctgaa ggtgtcctgg ccagccctgg agaagcactg gtgtctgcag			1023
caccctcag ttcctgtgcc tcagcccaca ggccactgtg ataatggtct gtttagcact			1083
tctgtattta ttgtaagaat gattataatg aagatacaca ctgtaactac aagaaattat			1143
aatgttttt cacatcaggc tgttcttttt ttttttttgg aggcgagggt aaagcattac			1203
tatttgcaaa gcactctgta gctccctgtt atgggggatag gtaactaatc agaataataa			1263

tgtcactcgc atccacttct tagaacctgg ctccaaagga aaataagctg atagactcaa 1323
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 actcactcct tggacttgct cccacccac tggggagagc actcctggag caggaaatga 2043
 gcatctctca tctccctgaa ttccacatcc actggctgaa tgatcaggga ggcatagcag 2103
 tgagagccat aggtcggcag agggaactca ggccctcctt taggatggcc atcacctcat 2163
 ctcaatccag ccaaatcaac catctagagc acacaggccg agagaaatgt aataaaatat 2223
 aacatgagac acgtatgaaa tttaactttt ccggtagcca cactagaaaa aggtaaaaaa 2283
 aaaaa 2288

<210> 124
 <211> 1047
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (95) .. (934)

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 tttccattta gatcaacaac ttcaagttct tacc atg gaa aat tcc gag aag 112
 Met Glu Asn Ser Glu Lys
 1 5
 act gaa gtg gtt ctc ctt gct tgt ggt tca ttc aat ccc atc acc aac 160

Thr	Glu	Val	Val	Leu	Leu	Ala	Cys	Gly	Ser	Phe	Asn	Pro	Ile	Thr	Asn		
			10					15					20				
atg	cac	ctc	agg	ttg	ttt	gag	ctg	gcc	aag	gac	tac	atg	aat	gga	aca		208
Met	His	Leu	Arg	Leu	Phe	Glu	Leu	Ala	Lys	Asp	Tyr	Met	Asn	Gly	Thr		
		25					30					35					
gga	agg	tac	aca	gtt	gtc	aaa	ggc	atc	atc	tct	cct	gtt	ggg	gat	gcc		256
Gly	Arg	Tyr	Thr	Val	Val	Lys	Gly	Ile	Ile	Ser	Pro	Val	Gly	Asp	Ala		
		40				45					50						
tac	aag	aag	aaa	gga	ctc	att	cct	gcc	tat	cac	cgg	gtc	atc	atg	gca		304
Tyr	Lys	Lys	Lys	Gly	Leu	Ile	Pro	Ala	Tyr	His	Arg	Val	Ile	Met	Ala		
	55				60					65					70		
gaa	ctt	gct	acc	aag	aat	tct	aaa	tgg	gtg	gaa	gtt	gat	aca	tgg	gaa		352
Glu	Leu	Ala	Thr	Lys	Asn	Ser	Lys	Trp	Val	Glu	Val	Asp	Thr	Trp	Glu		
				75				80						85			
agt	ctt	cag	aag	gag	tgg	aaa	gag	act	ctg	aag	gtg	cta	aga	cac	cat		400
Ser	Leu	Gln	Lys	Glu	Trp	Lys	Glu	Thr	Leu	Lys	Val	Leu	Arg	His	His		
			90					95					100				
caa	gag	aaa	ttg	gag	gct	agt	gac	tgt	gat	cac	cag	cag	aac	tca	cct		448
Gln	Glu	Lys	Leu	Glu	Ala	Ser	Asp	Cys	Asp	His	Gln	Gln	Asn	Ser	Pro		
		105					110					115					
act	cta	gaa	agg	cct	gga	agg	aag	agg	aag	tgg	act	gaa	aca	caa	gat		496
Thr	Leu	Glu	Arg	Pro	Gly	Arg	Lys	Arg	Lys	Trp	Thr	Glu	Thr	Gln	Asp		
	120					125					130						
tct	agt	caa	aag	aaa	tcc	cta	gag	cca	aaa	aca	aaa	gct	gtg	cca	aag		544
Ser	Ser	Gln	Lys	Lys	Ser	Leu	Glu	Pro	Lys	Thr	Lys	Ala	Val	Pro	Lys		
	135				140					145					150		
gtc	aag	ctg	ctg	tgt	ggg	gca	gat	tta	ttg	gag	tcc	ttt	gct	gtt	ccc		592
Val	Lys	Leu	Leu	Cys	Gly	Ala	Asp	Leu	Leu	Glu	Ser	Phe	Ala	Val	Pro		
				155				160						165			
aat	ttg	tgg	aag	agt	gaa	gac	atc	acc	caa	atc	gtg	gcc	aac	tat	ggg		640
Asn	Leu	Trp	Lys	Ser	Glu	Asp	Ile	Thr	Gln	Ile	Val	Ala	Asn	Tyr	Gly		
			170				175						180				
ctc	ata	tgt	gtt	act	cgg	gct	gga	aat	gat	gct	cag	aag	ttt	atc	tat		688
Leu	Ile	Cys	Val	Thr	Arg	Ala	Gly	Asn	Asp	Ala	Gln	Lys	Phe	Ile	Tyr		
		185					190					195					
gaa	tcg	gat	gtg	ctg	tgg	aaa	cac	cgg	agc	aac	att	cac	gtg	gtg	aat		736
Glu	Ser	Asp	Val	Leu	Trp	Lys	His	Arg	Ser	Asn	Ile	His	Val	Val	Asn		
	200					205					210						
gaa	tgg	atc	gct	aat	gac	atc	tca	tcc	aca	aaa	atc	cgg	aga	gcc	ctc		784
Glu	Trp	Ile	Ala	Asn	Asp	Ile	Ser	Ser	Thr	Lys	Ile	Arg	Arg	Ala	Leu		
	215				220					225					230		
aga	agg	ggc	cag	agc	att	cgc	tac	ttg	gta	cca	gat	ctt	gtc	caa	gaa		832
Arg	Arg	Gly	Gln	Ser	Ile	Arg	Tyr	Leu	Val	Pro	Asp	Leu	Val	Gln	Glu		

235	240	245	
tac att gaa aag cat aat ttg tac agc tct gag agt gaa gac agg aat			880
Tyr Ile Glu Lys His Asn Leu Tyr Ser Ser Glu Ser Glu Asp Arg Asn			
250	255	260	
gct ggg gtc atc ctg gcc cct ttg cag aga aac act gca gaa gct aag			928
Ala Gly Val Ile Leu Ala Pro Leu Gln Arg Asn Thr Ala Glu Ala Lys			
265	270	275	
aca tag gaattctaca gcatgatatt tcagacttcc catttgggga tctgaaacaa			984
Thr *			
280			
tctgggagtt aataactggg gaaagaagtt gtgatctgtt gcctaaacta aagcttaaaa			1044
gtt			1047

<210> 125
 <211> 474
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (28) .. (399)

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	Met Ala Lys Ile Lys Ala Arg Asp	
	1 5	
ctt cgc ggg aag aag aag gag gag ctg ctg aaa cag ctg gac gac ctg		99
Leu Arg Gly Lys Lys Lys Glu Glu Leu Leu Lys Gln Leu Asp Asp Leu		
10 15 20		
aag gtg gag ctg tcc cag ctg cgc gtc gcc aaa gtg aca ggc ggt gcg		147
Lys Val Glu Leu Ser Gln Leu Arg Val Ala Lys Val Thr Gly Gly Ala		
25 30 35 40		
gcc tcc aag ctc tct aag atc cga gtc gtc cgg aaa tcc att gcc cgt		195
Ala Ser Lys Leu Ser Lys Ile Arg Val Val Arg Lys Ser Ile Ala Arg		
45 50 55		
gtt ctc aca gtt att aac cag act cag aaa gaa aac ctc agg aaa ttc		243
Val Leu Thr Val Ile Asn Gln Thr Gln Lys Glu Asn Leu Arg Lys Phe		
60 65 70		
tac aag ggc aag aag tac aag ccc ctg gac ctg cgg cct aag aag aca		291
Tyr Lys Gly Lys Lys Tyr Lys Pro Leu Asp Leu Arg Pro Lys Lys Thr		
75 80 85		
cgt gcc atg cgc cgc cgg ctc aac aag cac gag gag aac ctg aag acc		339
Arg Ala Met Arg Arg Arg Leu Asn Lys His Glu Glu Asn Leu Lys Thr		

90	95	100	
aag aag cag cag cgg aag gag cgg ctg tac ccg ctg cag aag tac aca			387
Lys Lys Gln Gln Arg Lys Glu Arg Leu Tyr Pro Leu Gln Lys Tyr Thr			
105	110	115	120
gtg aac gcc tga acg tcacatgggt tcataaaaga gagctggccg aagagaacaa			442
Val Asn Ala *			
aagaaaagtg tgtattttaat atgcaattct gt			474

<210> 126
 <211> 2594
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (148) .. (576)

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tattgatcat tccgcagccc tgcggaccgg acacgtgagg aggtagtgac gccgacactg	120
ccagaacaca ctgctacaag gtcccg	171
atg gcc acg tct ctg gat ttt aaa	
Met Ala Thr Ser Leu Asp Phe Lys	
1 5	
act tat gta gat cag gca tgt aga gct gct gag gag ttt gtc aat att	219
Thr Tyr Val Asp Gln Ala Cys Arg Ala Ala Glu Glu Phe Val Asn Ile	
10 15 20	
tac tat gag aca atg gat aaa aga aga cgg gca cta acc agg ctg tat	267
Tyr Tyr Glu Thr Met Asp Lys Arg Arg Arg Ala Leu Thr Arg Leu Tyr	
25 30 35 40	
ctg gac aag gcc acc tta ata tgg aat gga aat gct gtt tca ggg ctg	315
Leu Asp Lys Ala Thr Leu Ile Trp Asn Gly Asn Ala Val Ser Gly Leu	
45 50 55	
gat gcc cta aat aat ttt ttt gac aca ttg cct tct agt gag ttc cag	363
Asp Ala Leu Asn Asn Phe Phe Asp Thr Leu Pro Ser Ser Glu Phe Gln	
60 65 70	
gtc aat atg tta gat tgc caa cca gtt cat gag caa gca act cag tcc	411
Val Asn Met Leu Asp Cys Gln Pro Val His Glu Gln Ala Thr Gln Ser	
75 80 85	
caa act aca gtt ctt gtt gtg acc agt gga act gtg aag ttt gat gga	459
Gln Thr Thr Val Leu Val Val Thr Ser Gly Thr Val Lys Phe Asp Gly	
90 95 100	

aac aaa caa cat ttc ttc aac cag aac ttc ctg ctg act gct cag tcc	507
Asn Lys Gln His Phe Phe Asn Gln Asn Phe Leu Leu Thr Ala Gln Ser	
105 110 115 120	
act ccc aac aat act gtg tgg aag att gca agt gat tgc ttc cgt ttt	555
Thr Pro Asn Asn Thr Val Trp Lys Ile Ala Ser Asp Cys Phe Arg Phe	
125 130 135	
caa gat tgg tct agt agt taa ag gggcaaaagt ccattctcat ttggtccatt	608
Gln Asp Trp Ser Ser Ser *	
140	
agttccagca attgaaatct atgtgaatta ttttgattgt agaagcacta taatatgtgc	668
tgaactaaa tttctttaat attttctatt cctgtcagca ctttttctag cagctgccag	728
tttgagcat tgccctctaa gagctttaaa actatttttt tacatgcctt atatacattc	788
cactaatgac attcttataa taatattaaa cacatgatct tggtactaac atactcactg	848
tgaaccagc ctattgcaaa aataaaatct ttttataata ttatctatgg gatgtcagca	908
caatataaca ctctgggaag aagtggagtt ttttggttat taggttaatt ttctagtaaa	968
acacattgcc tgttttcagt taacactggg aatgccattt taatatatgg ctttttcaaa	1028
tcagttcagt gaaaatagta cagatttagg ttacataac tactctgaca tactggaatt	1088
gcatatagag atgttcagtg gtcgtttttc attttaagta atttttgttt tggcattttt	1148
ttgtgtgaag taaattaatc aactagagag gtgcaaacg ttctcagttg atatctgagt	1208
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caggtctata catttaggta atgaatggta gtagaactaa tagctttaac aggagaatag	1328
ggaatgagaa atagaaatcc aaggctgaag ccaaaagtaa ggagggtggc caaatggtaa	1388
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taagtaaata agtatccttg ccaagtgatc atgagtgtca tttttgttct aagactaata	1508
tttttagatc tttttacttc acctcactat tatcaccaat gtatatctcc atttattcaa	1568
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ttttttccca gtgctttgta ctgtcaactg cattatcttt aattatttaa aggtagaatt	1808
atttaatttt gtgatttggt cttccatatg acattgagca aatagatctg tttcaaaata	1868
tgttcccgt atgtggataa ctcttctttt taaaagaaa atagagaata gcaaactctc	1928
atgataatcc tcaaaagaac aaaatgctta actttatctc ttaatttcta aaggtaaata	1988

acctagggttc agcttttgc taaacattaa atatcttttc catttttttaa tgtttgtaag 2048
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aaaaaa 2594

<210> 127
<211> 2519
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (229)..(2145)

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Met Asn Phe
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Lys Tyr Val Gly Arg Tyr Ile Lys Asn Ile Ala Tyr Leu Phe Leu Lys
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Ile Thr Val Ile Gln Ile Phe His Ser Asp Leu Pro Met Pro Asn Glu
20 25 30 35
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Lys Asn Asp Ala Glu Leu Asp Ser Pro Pro Ser Lys Lys Lys Arg Leu
40 45 50

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Asp Ser Phe Leu Leu Leu Gln Gln Ser Val Thr Leu Gly Ser Ser Gly	
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Glu Val Asp Arg Leu Val Ala Gln Ile Gly Glu Thr Leu Gln Leu Asp	
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Ala Ala Gln Asp Ser Pro Ala Ser Pro Cys Ala Pro Pro Gly Val Pro	
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Leu Arg Ala Pro Gly Pro Leu Ala Ala Ala Val Pro Thr Asp Lys Ala	
75 80 85	
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Arg Pro Pro Ala Val Pro Leu Leu Leu Pro Pro Ala Ser Ala Glu Thr	
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Val Gly Pro Ala Pro Ser Gly Ala Leu Arg Cys Ala Leu Gly Asp Arg	
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Gly Arg Val Arg Gly Arg Ala Ala Pro Tyr Cys Val Ala Glu Val Ala	
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Ala Gly Pro Ser Ala Leu Pro Gly Pro Cys Arg Arg Gly Trp Leu Arg	
135 140 145 150	
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Asp Ala Val Thr Ser Arg Arg Leu Gln Gln Arg Arg Trp Thr Gln Ala	
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Gly Ala Arg Ala Gly Asp Asp Asp Pro His Arg Leu Leu Gln Gln Leu	
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Val Leu Ser Gly Asn Leu Ile Lys Glu Ala Val Arg Arg Leu Gln Arg	
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Gly Gly Gly Arg Ser Gly Pro Asp Arg Ile Ala Leu Gln Pro Ser Gly	
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aaaaa	2166

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Gly Tyr Leu Tyr Gln Thr Leu Leu *				
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Met Met Thr His Leu His Val Lys Ser Thr Glu Pro				

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aaa gcc gcc cct cag ccc ttg aat ctg gta tca agt gtc act ctc tcc				399
Lys Ala Ala Pro Gln Pro Leu Asn Leu Val Ser Ser Val Thr Leu Ser				
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aag tcc gca tcg gag gct tct cca cag agc tta cct cat act cca acg				447
Lys Ser Ala Ser Glu Ala Ser Pro Gln Ser Leu Pro His Thr Pro Thr				
	30	35	40	
acc cca acc gcc ccc ctg act ccc gtc acc caa ggc ccc tct gtc atc				495
Thr Pro Thr Ala Pro Leu Thr Pro Val Thr Gln Gly Pro Ser Val Ile				
	45	50	55	60
aca acc acc agc atg cac acg gtg gga ccc atc cgc agg cgg tac tca				543
Thr Thr Thr Ser Met His Thr Val Gly Pro Ile Arg Arg Arg Tyr Ser				
	65	70	75	
gac aaa tac aac gtg ccc att tcg tca gca gat att gcg cag aac caa				591
Asp Lys Tyr Asn Val Pro Ile Ser Ser Ala Asp Ile Ala Gln Asn Gln				
	80	85	90	
gaa ttt tat aag aac gca gaa gtt aga cca cca ttt aca tat gca tct				639
Glu Phe Tyr Lys Asn Ala Glu Val Arg Pro Pro Phe Thr Tyr Ala Ser				
	95	100	105	
tta att agg cag gcc att ctc gaa tct cca gaa aag cag cta aca cta				687
Leu Ile Arg Gln Ala Ile Leu Glu Ser Pro Glu Lys Gln Leu Thr Leu				
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aat gag atc tat aac tgg ttc aca cga atg ttt gct tac ttc cga cgc				735
Asn Glu Ile Tyr Asn Trp Phe Thr Arg Met Phe Ala Tyr Phe Arg Arg				
	125	130	135	140
aac gcg gcc acg tgg aag aat gca gtg cgt cat aat ctt agt ctt cac				783
Asn Ala Ala Thr Trp Lys Asn Ala Val Arg His Asn Leu Ser Leu His				
	145	150	155	
aag tgt ttt gtg cga gta gaa aac gtt aaa ggg gca gta tgg aca gtg				831
Lys Cys Phe Val Arg Val Glu Asn Val Lys Gly Ala Val Trp Thr Val				
	160	165	170	
gat gaa gta gaa ttc caa aaa cga agg cca caa aag atc agt ggt aac				879
Asp Glu Val Glu Phe Gln Lys Arg Arg Pro Gln Lys Ile Ser Gly Asn				
	175	180	185	
cct tcc ctt att aaa aac atg cag agc agc cac gcc tac tgc aca cct				927
Pro Ser Leu Ile Lys Asn Met Gln Ser Ser His Ala Tyr Cys Thr Pro				
	190	195	200	
ctc aat gca gct tta cag gct tca atg gct gag aat agt ata cct cta				975
Leu Asn Ala Ala Leu Gln Ala Ser Met Ala Glu Asn Ser Ile Pro Leu				
	205	210	215	220
tac act acc gct tcc atg gga aat ccc act ctg ggc aac tta gcc agc				1023
Tyr Thr Thr Ala Ser Met Gly Asn Pro Thr Leu Gly Asn Leu Ala Ser				
	225	230	235	

gca ata cgg gaa gag ctg aac ggg gca atg gag cat acc aac agc aac 1071
Ala Ile Arg Glu Glu Leu Asn Gly Ala Met Glu His Thr Asn Ser Asn
240 245 250

gag agt gac agc agt cca ggc aga tct cct atg caa gcc gtg cat cct 1119
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255 260 265

gta cac gtc aaa gaa gag ccc ctc gat cca gag gaa gct gaa ggg ccc 1167
Val His Val Lys Glu Glu Pro Leu Asp Pro Glu Glu Ala Glu Gly Pro
270 275 280

ctg tcc tta gtg aca aca gcc aac cac agt cca gat ttt gac cat gac 1215
Leu Ser Leu Val Thr Thr Ala Asn His Ser Pro Asp Phe Asp His Asp
285 290 295 300

aga gat tac gaa gat gaa cca gta aac gag gac atg gag tga ctatcgg 1264
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Met Cys Phe Pro Lys Val Leu
1 5

tct gat gac atg aag aag ctg aag gcc cga atg cac cag gcc ata gaa 159
Ser Asp Asp Met Lys Lys Leu Lys Ala Arg Met His Gln Ala Ile Glu
10 15 20

aga ttt tat gat aaa atg caa aat gca gaa tca gga cgt gga cag gtg 207
Arg Phe Tyr Asp Lys Met Gln Asn Ala Glu Ser Gly Arg Gly Gln Val
25 30 35

atg tcg agc ctg gca gag ctg gag gac gac ttc aaa gag ggc tac ctg 255
Met Ser Ser Leu Ala Glu Leu Glu Asp Asp Phe Lys Glu Gly Tyr Leu
40 45 50 55

gag aca gtg gcg gct tat tat gag gag cag cac cca gag ctc act cct 303
Glu Thr Val Ala Ala Tyr Tyr Glu Glu Gln His Pro Glu Leu Thr Pro
60 65 70

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cta ctt gaa aaa gaa aga gat gga tta cgg tgc cga ggc aac aga tcc      351
Leu Leu Glu Lys Glu Arg Asp Gly Leu Arg Cys Arg Gly Asn Arg Ser
              75                      80                      85

cct gtc ccg gat gtt gag gat ccc gca acc gag gag cct ggg gag agc      399
Pro Val Pro Asp Val Glu Asp Pro Ala Thr Glu Glu Pro Gly Glu Ser
              90                      95                      100

ttt tgt gac aag gtc atg aga tgg ttc cag gcc atg ctg cag cgg ctg      447
Phe Cys Asp Lys Val Met Arg Trp Phe Gln Ala Met Leu Gln Arg Leu
              105                      110                      115

cag acc tgg tgg cac ggg gtt ctg gcc tgg gtg aag gag aag gtg gtg      495
Gln Thr Trp Trp His Gly Val Leu Ala Trp Val Lys Glu Lys Val Val
              120                      125                      130                      135

gcc ctg gtc cat gca gtg cag gcc ctc tgg aaa cag ttc cag agt ttc      543
Ala Leu Val His Ala Val Gln Ala Leu Trp Lys Gln Phe Gln Ser Phe
              140                      145                      150

tgc tgc tct ctg tca gag ctc ttc atg tcc tct ttc cag tcc tac gga      591
Cys Cys Ser Leu Ser Glu Leu Phe Met Ser Ser Phe Gln Ser Tyr Gly
              155                      160                      165

gcc cca cgg ggg gac aag gag gag ctg aca ccc cag aag tgc tct gaa      639
Ala Pro Arg Gly Asp Lys Glu Glu Leu Thr Pro Gln Lys Cys Ser Glu
              170                      175                      180

ccc caa tcc tca aaa tga agatac tgacaccacc ttgcccctcc ccgtcaccgc      693
Pro Gln Ser Ser Lys *
              185

gcacccaccc tgacccctcc ctcagctgtc ctgtgccccg ccctctcccg cacactcagt      753

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Lys	Leu	Lys	Arg	Lys	Lys	Gln	Val	Ala	Pro	Glu	Lys	Pro	Val	Lys	Lys		
	25					30					35						
caa	aag	aca	ggt	gag	act	tcg	aga	gcc	ctg	tca	tct	tct	aaa	cag	agc		197
Gln	Lys	Thr	Gly	Glu	Thr	Ser	Arg	Ala	Leu	Ser	Ser	Ser	Lys	Gln	Ser		
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agc	agc	agc	aga	gat	gat	aac	atg	ttt	cag	att	ggg	aaa	atg	agg	tac		245
Ser	Ser	Ser	Arg	Asp	Asp	Asn	Met	Phe	Gln	Ile	Gly	Lys	Met	Arg	Tyr		
				60					65					70			
gtt	agt	gtt	cgc	gat	ttt	aaa	ggc	aaa	gtg	cta	att	gat	att	aga	gaa		293
Val	Ser	Val	Arg	Asp	Phe	Lys	Gly	Lys	Val	Leu	Ile	Asp	Ile	Arg	Glu		
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Tyr	Trp	Met	Asp	Pro	Glu	Gly	Glu	Met	Lys	Pro	Gly	Arg	Lys	Gly	Ile		
		90					95					100					
tct	tta	aat	cca	gaa	caa	tgg	atc	cag	tcc	agc	aga	aaa	gat	atg	atg		389
Ser	Leu	Asn	Pro	Glu	Gln	Trp	Ile	Gln	Ser	Ser	Arg	Lys	Asp	Met	Met		
	105				110						115						
aca	ttg	atg	aag	cac	gtg	agc	ggt	ctg	taa	t	aatg	cgagcc	agatta	aattt			440
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				Met	Glu	Thr	Thr	Leu	Leu								
				1				5									
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 aaatatgtca tgtgaaatta ttttaaaaaat gtaaaaacaa aacttttctgc taacaaaata 1020
 catacagtat ctgccagtat attctgtaaa acctttctatt tgatgtcatt ccattttataa 1080
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 aagattgtag agttaagtaa aagttaagct tttgcaaagt tgtcaaaagt tcaaacaaaa 1200
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 cagatatcca aatgttcaga tagcattttt cataatgaat gttctctttt ttttggaat 1320
 agtgtagaag tgatctgggtt cttacaatgg gagatgaaga acatttatta ttgggttact 1380
 actaaccttg tccaagaat agtaatatca cctctagtta taagccagca acaggaactt 1440
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 agctatggaa acagatgata tggaagacat ccaacaagga ggaaaagcac acgcacgcct 180
 caccctgcc tcattctctgc ccagggtgt cctgacagca cagacgcttc agggagacag 240

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tagaaaagac aggaggaacc cgctgcatg gagattgggg ggagctggaa gcaagcagcc 480
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tccaatccca atttaccatt cctgtaaaca ggcccattca gggctgcctg agcaaattggg 720
gacttgccga ggcagctgca actagacttg ggctaagccg tctgggtcta ctcaagaatt 780
cgagtctgaa gatgaccaag cttgagttat tcaactgaga gtgaggtgtc aaggcggaag 840
cgactgtccc cagggaaggg ctgtgag atg gat ggg cgt gag tca gct ttt 891
Met Asp Gly Arg Glu Ser Ala Phe
1 5
cca aaa ctc aag tac ctg gga cag gac aac tcg cta gca gct cag tca 939
Pro Lys Leu Lys Tyr Leu Gly Gln Asp Asn Ser Leu Ala Ala Gln Ser
10 15 20
cct ccg tgg cgg aca cag ata agg atg tta aga cca gaa aac cag aga 987
Pro Pro Trp Arg Thr Gln Ile Arg Met Leu Arg Pro Glu Asn Gln Arg
25 30 35 40
cta ggg ccc cgt cct cag ccc tca cag cat gac aca gat gcc tcc ctc 1035
Leu Gly Pro Arg Pro Gln Pro Ser Gln His Asp Thr Asp Ala Ser Leu
45 50 55
gga gag cag ggt ctc tcg gca tcc agc ggc gtg gtc tgc att ctg ctc 1083
Gly Glu Gln Gly Leu Ser Ala Ser Ser Gly Val Val Cys Ile Leu Leu
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tac ctc atg ctc tag gccccatgcc atcgtctcgg ccctagaccg tgaaaactgc 1138
Tyr Leu Met Leu *
75
cagtcacccg ggacctgctc ctaggggctg gcctgcacag ccggatggcc tgtgggcggg 1198
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1601

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<212> DNA
<213> Homo sapiens

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cagtgcgggg tcccaagccc tgcagtgcta cagctttgag cacacctact ttggcccctt      180
tgacctcagg gcc    atg aag ctg ccc agc atc tcc tgt cct cat gag tgc      229
                  Met Lys Leu Pro Ser Ile Ser Cys Pro His Glu Cys
                  1             5             10

ttt gag gct atc ctg tct ctg gac acc ggg tat cgc gcg ccg gtg acc      277
Phe Glu Ala Ile Leu Ser Leu Asp Thr Gly Tyr Arg Ala Pro Val Thr
      15             20             25

ctg gtg cgg aag ggc tgc tgg acc ggg cct cct gcg ggc cag acg caa      325
Leu Val Arg Lys Gly Cys Trp Thr Gly Pro Pro Ala Gly Gln Thr Gln
      30             35             40

tcg aac ccg gac gcg ctg ccg cca gac tac tcg gtg gtg cgc ggc tgc      373
Ser Asn Pro Asp Ala Leu Pro Pro Asp Tyr Ser Val Val Arg Gly Cys
      45             50             55             60

aca act gac aaa tgc aac gcc cac ctc atg act cat gac gcc ctc ccc      421
Thr Thr Asp Lys Cys Asn Ala His Leu Met Thr His Asp Ala Leu Pro
      65             70             75

aac ctg agc caa gca ccc gac ccg ccg acg ctc agc ggc gcc gag tgc      469
Asn Leu Ser Gln Ala Pro Asp Pro Pro Thr Leu Ser Gly Ala Glu Cys
      80             85             90

tac gcc tgt atc ggg gtc cac cag gat gac tgc gct atc ggc agg tcc      517
Tyr Ala Cys Ile Gly Val His Gln Asp Asp Cys Ala Ile Gly Arg Ser
      95             100             105

cga cga gtc cag tgt cac cag gac cag acc gcc tgc ttc cag ggc aat      565
Arg Arg Val Gln Cys His Gln Asp Gln Thr Ala Cys Phe Gln Gly Asn
      110             115             120

ggc aga atg aca gtt ggc aat ttc tca gtc cct gtg tac atc aga acc      613
Gly Arg Met Thr Val Gly Asn Phe Ser Val Pro Val Tyr Ile Arg Thr
      125             130             135             140

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tgc cac cgg ccc tcc tgc acc acc gag ggc acc acc agc ccc tgg aca	661
Cys His Arg Pro Ser Cys Thr Thr Glu Gly Thr Thr Ser Pro Trp Thr	
145 150 155	
gcc atc gac ctc cag ggc tcc tgc tgt gag ggg tac ctc tgc aac agg	709
Ala Ile Asp Leu Gln Gly Ser Cys Cys Glu Gly Tyr Leu Cys Asn Arg	
160 165 170	
aaa tcc atg acc cag ccc ttc acc agt gct tca gcc acc acc cct ccc	757
Lys Ser Met Thr Gln Pro Phe Thr Ser Ala Ser Ala Thr Thr Pro Pro	
175 180 185	
cga gca cta cag gtc ctg gcc ctg ctc ctc cca gtc ctc ctg ctg gtg	805
Arg Ala Leu Gln Val Leu Ala Leu Leu Leu Pro Val Leu Leu Leu Val	
190 195 200	
ggg ctc tca gca tag accgccccctc caggatgctg gggacagggc tcacacacct	860
Gly Leu Ser Ala *	
205	
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atg gtc aac gtc ttg aaa gga gtg ctt ata gaa tgt gat cct gcc atg	167
Met Val Asn Val Leu Lys Gly Val Leu Ile Glu Cys Asp Pro Ala Met	
1 5 10 15	
aag cag ttt ctg ctg tac ttg gat gag tcc aat gcc ctg ggg aag aag	215
Lys Gln Phe Leu Leu Tyr Leu Asp Glu Ser Asn Ala Leu Gly Lys Lys	
20 25 30	
ttc atc att caa gac att gat gac act cac gtc ttt gta ata gca gaa	263
Phe Ile Ile Gln Asp Ile Asp Asp Thr His Val Phe Val Ile Ala Glu	
35 40 45	
ttg gtt aat gtc ctc cag gag cga gtg ggt gaa tta atg gac caa aat	311
Leu Val Asn Val Leu Gln Glu Arg Val Gly Glu Leu Met Asp Gln Asn	
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aaaaaaaaa a

459

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<212> DNA
<213> Homo sapiens

<220>
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<222> (197)..(691)

<400> 138

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gcactgcccc ctaaagcagg ccttacagat ctcttacact cgtgggtggga agagtctagt      180
gtgaaactgg ggtgga      atg ggg tgt cca cgt atg ttc cct ttt gcc tta      229
                        Met Gly Cys Pro Arg Met Phe Pro Phe Ala Leu
                        1          5          10

cta tat gtt ctg tca gtt tct ttc agg aaa atc ttc atc tta caa ctt      277
Leu Tyr Val Leu Ser Val Ser Phe Arg Lys Ile Phe Ile Leu Gln Leu
                        15          20          25

gta ggg ctg gtg tta act tac gac ttc act aac tgt gac ttt gag aag      325
Val Gly Leu Val Leu Thr Tyr Asp Phe Thr Asn Cys Asp Phe Glu Lys
                        30          35          40

att aaa gca gcc tat ctc agt act att tct aaa gac ctg att aca tat      373
Ile Lys Ala Ala Tyr Leu Ser Thr Ile Ser Lys Asp Leu Ile Thr Tyr
                        45          50          55

atg agt ggg acc aaa agt acc gag ttc aac aac acc gtc tct tgt agc      421
Met Ser Gly Thr Lys Ser Thr Glu Phe Asn Asn Thr Val Ser Cys Ser
                        60          65          70          75

aat cgg cca cat tgc ctt act gaa atc cag agc cta acc ttc aat ccc      469
Asn Arg Pro His Cys Leu Thr Glu Ile Gln Ser Leu Thr Phe Asn Pro
                        80          85          90

acc gcc ggc tgc gcg tcg ctc gcc aaa gaa atg ttc gcc atg aaa act      517
Thr Ala Gly Cys Ala Ser Leu Ala Lys Glu Met Phe Ala Met Lys Thr
                        95          100          105

aag gct gcc tta gct atc tgg tgc cca ggc tat tcg gaa act cag ata      565
Lys Ala Ala Leu Ala Ile Trp Cys Pro Gly Tyr Ser Glu Thr Gln Ile
                        110          115          120

aat gct act cag gca atg aag aag agg aga aaa agg aaa gtc aca acc      613
Asn Ala Thr Gln Ala Met Lys Lys Arg Arg Lys Arg Lys Val Thr Thr
                        125          130          135

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aat aaa tgt ctg gaa caa gtg tca caa tta caa gga ttg tgg cgt cgc 661
 Asn Lys Cys Leu Glu Gln Val Ser Gln Leu Gln Gly Leu Trp Arg Arg
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ttc aat cga cct tta ctg aaa caa cag taa 691
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 gaagcgcgaa gctgggattt tttactgtct cctgaagaat ttaacacaaa c atg gat 177
 Met Asp
 1
 atc aga cca aat cat aca att tat atc aac aat atg aat gac aaa att 225
 Ile Arg Pro Asn His Thr Ile Tyr Ile Asn Asn Met Asn Asp Lys Ile
 5 10 15
 aaa aag gaa gaa ttg aag aga tcc cta tat gcc ctg ttt tct cag ttt 273
 Lys Lys Glu Glu Leu Lys Arg Ser Leu Tyr Ala Leu Phe Ser Gln Phe
 20 25 30
 ggt cat gtg gtg gac att gtg gct tta aag acc atg aag atg agg ggg 321
 Gly His Val Val Asp Ile Val Ala Leu Lys Thr Met Lys Met Arg Gly
 35 40 45 50
 cag gcc ttt gtc ata ttt aag gaa ctg ggc tca tcc aca aat gcc ttg 369
 Gln Ala Phe Val Ile Phe Lys Glu Leu Gly Ser Ser Thr Asn Ala Leu
 55 60 65
 aga cag cta caa gga ttt cca ttt tat ggt aaa cca atg cga ata cag 417
 Arg Gln Leu Gln Gly Phe Pro Phe Tyr Gly Lys Pro Met Arg Ile Gln
 70 75 80
 tat gca aaa aca gat tcg gat ata ata tca aaa atg cgt gga act ttt 465
 Tyr Ala Lys Thr Asp Ser Asp Ile Ile Ser Lys Met Arg Gly Thr Phe
 85 90 95
 gct gac aaa gaa aag aaa aaa gaa aag aaa aaa gcc aaa act gtg gaa 513
 Ala Asp Lys Glu Lys Lys Lys Glu Lys Lys Lys Ala Lys Thr Val Glu
 100 105 110

cag act gca aca acc aca aac aaa aag cct ggc ttc aag gaa gta cgt 561
Gln Thr Ala Thr Thr Thr Asn Lys Lys Pro Gly Phe Lys Glu Val Arg
115 120 125 130

ctg gta cca ggg agg cat gac att gct ttt gtt gaa ttt gaa aat gat 609
Leu Val Pro Gly Arg His Asp Ile Ala Phe Val Glu Phe Glu Asn Asp
135 140 145

ggg cag gct gga gct gcc agg gat gct tta cag gga ttt aag atc aca 657
Gly Gln Ala Gly Ala Ala Arg Asp Ala Leu Gln Gly Phe Lys Ile Thr
150 155 160

ccg tcc cat gct atg aag atc acc tat gcc aag aaa taa catttgggat 706
Pro Ser His Ala Met Lys Ile Thr Tyr Ala Lys Lys *
165 170 175

agtcgtctttt aaaagacttg gtgttattta cagtgtttgt tttgataaca tttggctggg 766

tcattttaat agttagagat gaggaggagt aaaagtgaat tttttgtgaa ggacttaaat 826

tatccagtgt ttcttttagcc ttggtgaact atgaaatagc aaggccttaa ttttgtacaa 886

taaacttttta tttgtattct gtgtaaaaaa aaaaaaaa 924

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<213> Homo sapiens

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ttctggtgct gcagtcagga atg gag ctt gac agc gct ctg gaa gcc cca 170
Met Glu Leu Asp Ser Ala Leu Glu Ala Pro
1 5 10

tcg cag gaa gac tct aat ttg tcc gag gag ttg tct cac tcc gcc ttt 218
Ser Gln Glu Asp Ser Asn Leu Ser Glu Glu Leu Ser His Ser Ala Phe
15 20 25

gga cag gcc ttc tcc aag att tta cac tgt ctt gcc cgc ccg gag gca 266
Gly Gln Ala Phe Ser Lys Ile Leu His Cys Leu Ala Arg Pro Glu Ala
30 35 40

cga cga ggc aat gta aaa gat gca gtt ctt aaa gac ctc ggt gat cta 314
Arg Arg Gly Asn Val Lys Asp Ala Val Leu Lys Asp Leu Gly Asp Leu
45 50 55

ata gaa gcc aca gaa ttt gat agg tta ttt gag ggg act ggt gca cgg Ile Glu Ala Thr Glu Phe Asp Arg Leu Phe Glu Gly Thr Gly Ala Arg 60 65 70	362
ctc cgc gga atg ccg gag aca ctg ggg cag gta gca aaa gcc ctg gag Leu Arg Gly Met Pro Glu Thr Leu Gly Gln Val Ala Lys Ala Leu Glu 75 80 85 90	410
aag tat gca gcc ccc tcc aag gag gag gaa ggt gga ggt gat ggg cac Lys Tyr Ala Ala Pro Ser Lys Glu Glu Glu Gly Gly Gly Asp Gly His 95 100 105	458
tcc gaa gcg gcc gag aaa gca gcc caa gtt ggg tta ctg ttt ctt aaa Ser Glu Ala Ala Glu Lys Ala Ala Gln Val Gly Leu Leu Phe Leu Lys 110 115 120	506
ctg tta ggg aaa gtt gag act gct aag aat tcc ctg gtc ggc cct gca Leu Leu Gly Lys Val Glu Thr Ala Lys Asn Ser Leu Val Gly Pro Ala 125 130 135	554
tgg cag acg ggc ctg cat cac ttg gca gga ccc gtt tat att ttt gcc Trp Gln Thr Gly Leu His His Leu Ala Gly Pro Val Tyr Ile Phe Ala 140 145 150	602
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tct gtg gca gga ttc cta cat gga gaa aat gaa gat gag aaa ggg aga Ser Val Ala Gly Phe Leu His Gly Glu Asn Glu Asp Glu Lys Gly Arg 190 195 200	746
ctt tcg gtg ata cta ggg ctt ctc aaa ccc gac ttg tat aag gaa tcc Leu Ser Val Ile Leu Gly Leu Leu Lys Pro Asp Leu Tyr Lys Glu Ser 205 210 215	794
tgg aag aat aac cct gcc atc aaa cat gtt ttc tca tgg act ctg caa Trp Lys Asn Asn Pro Ala Ile Lys His Val Phe Ser Trp Thr Leu Gln 220 225 230	842
cag gtc act cgg ccc tgg ctg agc cag cat ctg gaa agg gta ctt ccc Gln Val Thr Arg Pro Trp Leu Ser Gln His Leu Glu Arg Val Leu Pro 235 240 245 250	890
gca tca ttg gtc att tca gat gac tat cag act gag aac aaa atc ctg Ala Ser Leu Val Ile Ser Asp Asp Tyr Gln Thr Glu Asn Lys Ile Leu 255 260 265	938
ggt gta cac tgt ctc cat cac att gtg ctt aat gtg cca gct gct gat Gly Val His Cys Leu His His Ile Val Leu Asn Val Pro Ala Ala Asp 270 275 280	986

ttg ctc cag tat aac aga gcc cag gtc cta tac cat gcc att tcc aac Leu Leu Gln Tyr Asn Arg Ala Gln Val Leu Tyr His Ala Ile Ser Asn 285 290 295	1034
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ctg ctg gat tta ttc ccc atc ctg gag aaa acc ctg cac tgg aaa gga Leu Leu Asp Leu Phe Pro Ile Leu Glu Lys Thr Leu His Trp Lys Gly 315 320 325 330	1130
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cca aac ctt aca cct gag tct gtt aag agc gcc ctg cta cag gag gcc Pro Asn Leu Thr Pro Glu Ser Val Lys Ser Ala Leu Leu Gln Glu Ala 445 450 455	1514
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ggt ctc ctg gcc aaa att ccc caa agc tgt gaa gac aga aaa gtg gtg Gly Leu Leu Ala Lys Ile Pro Gln Ser Cys Glu Asp Arg Lys Val Val 475 480 485 490	1610
aac tat atc aga aaa gtg cag cag gtt tct gaa ggc gca ccc tac aat Asn Tyr Ile Arg Lys Val Gln Gln Val Ser Glu Gly Ala Pro Tyr Asn 495 500 505	1658
gga act taa gacttgt attactttcc caagaggaaa ggattttctt cccatcccaa	1714

Gly Thr *

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<212> DNA
<213> Homo sapiens

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Met Gln Ala Lys Tyr
1 5
agc agc acg agg gac atg ctg gat gat gat ggg gac acc acc atg agc 162
Ser Ser Thr Arg Asp Met Leu Asp Asp Asp Gly Asp Thr Thr Met Ser
10 15 20
ctg cat tct caa gcc tct gcc aca act cgg cat cca gag ccc cgg cgc 210
Leu His Ser Gln Ala Ser Ala Thr Thr Arg His Pro Glu Pro Arg Arg
25 30 35
aca gag cac agg gct ccc tct tca acg tgg cga cca gtg gcc ctg acc 258
Thr Glu His Arg Ala Pro Ser Ser Thr Trp Arg Pro Val Ala Leu Thr
40 45 50
ctg ctg act ttg tgc ttg gtg ctg ctg ata ggg ctg gca gcc ctg ggg 306
Leu Leu Thr Leu Cys Leu Val Leu Leu Ile Gly Leu Ala Ala Leu Gly
55 60 65
ctt ttg ttt ttt cag tac tac cag ctc tcc aat act ggt caa gac acc 354
Leu Leu Phe Phe Gln Tyr Tyr Gln Leu Ser Asn Thr Gly Gln Asp Thr
70 75 80 85
att tct caa atg gaa gaa aga tta gga aat acg tcc caa gag ttg caa 402
Ile Ser Gln Met Glu Glu Arg Leu Gly Asn Thr Ser Gln Glu Leu Gln
90 95 100
tct ctt caa gtc cag aat ata aag ctt gca gga agt ctg cag cat gtg 450
Ser Leu Gln Val Gln Asn Ile Lys Leu Ala Gly Ser Leu Gln His Val
105 110 115

gct gaa aaa ctc tgt cgt gag ctg tat aac aaa gct gga gca cac agg	498
Ala Glu Lys Leu Cys Arg Glu Leu Tyr Asn Lys Ala Gly Ala His Arg	
120 125 130	
tgc agc cct tgt aca gaa caa tgg aaa tgg cat gga gac aat tgc tac	546
Cys Ser Pro Cys Thr Glu Gln Trp Lys Trp His Gly Asp Asn Cys Tyr	
135 140 145	
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Gln Phe Tyr Lys Asp Ser Lys Ser Trp Glu Asp Cys Lys Tyr Phe Cys	
150 155 160 165	
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Leu Ser Glu Asn Ser Thr Met Leu Lys Ile Asn Lys Gln Glu Asp Leu	
170 175 180	
gaa ttt gcc gcg tct cag agc tac tct gag ttt ttc tac tct tat tgg	690
Glu Phe Ala Ala Ser Gln Ser Tyr Ser Glu Phe Phe Tyr Ser Tyr Trp	
185 190 195	
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Thr Gly Leu Leu Arg Pro Asp Ser Gly Lys Ala Trp Leu Trp Met Asp	
200 205 210	
gga acc cct ttc act tct gaa ctg ttc cat att ata ata gat gtc acc	786
Gly Thr Pro Phe Thr Ser Glu Leu Phe His Ile Ile Ile Asp Val Thr	
215 220 225	
agc cca aga agc aga gac tgt gtg gcc atc ctt aat ggg atg atc ttc	834
Ser Pro Arg Ser Arg Asp Cys Val Ala Ile Leu Asn Gly Met Ile Phe	
230 235 240 245	
tca aag gac tgc aaa gaa ttg aag cgt tgt gtc tgt gag aga agg gca	882
Ser Lys Asp Cys Lys Glu Leu Lys Arg Cys Val Cys Glu Arg Arg Ala	
250 255 260	
gga atg gtg aag cca gag agc ctc cat gtc ccc cct gaa aca tta ggc	930
Gly Met Val Lys Pro Glu Ser Leu His Val Pro Pro Glu Thr Leu Gly	
265 270 275	
gaa ggt gac tga ttc gccctctgca actacaaata gcagagtgcg ccaggcgggtg	985
Glu Gly Asp *	
280	
ccaaagcaag ggctagttaga gacattggga aatggaacat aatcaggaaa gactatctct	1045
ctgactagta caaatgggt tctcgtgttt cctgttcagg atcaccagca tttctgagct	1105
tggtgtttatg cacgtattta acagtcacaa gaagtcttat ttacatgccca ccaaccaacc	1165
tcagaaaccc ataatgtcat ctgccttctt ggcttagaga taacttttag ctctctttct	1225
tctcaatgtc taatatcacc tccctgtttt catgtcttcc ttacacttgg tggaataaga	1285
aactttttga agtagaggaa atacattgag gtaacatcct tttctctgac agtcaagtag	1345
tccatcagaa attggcagtc acttcccaga ttgtaccagc aaatacacia ggaattcttt	1405

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ttgtttgttt cagttcatac tagtcccttc ccaatccatc agtaaagacc ccatctgcct 1465
tgtccatgcc gtttcccaac agggatgtca cttgatatga gaatctcaaa tctcaatgcc 1525
ttataagcat tccttctgt gtccattaag actctgataa ttgtctcccc tccataggaa 1585
tttctcccag gaaagaaata tatccccatc tccgtttcat atcagaacta ccgccccga 1645
tattcccttc agagagatta aagaccagaa aaaagtgagc ctcttcatct gcacctgtaa 1705
tagtttcagt tcctattttc ttccattgac ccatatttat acctttcagg tactgaagat 1765
ttaataataa taaatgtaaa tactgtgaag tgtgtgtgat ttacaatgg acttatggtt 1825
ggtgggaaaa ttccagcatgg aaatgctttt caaaatatga tagcggcat tattttgatt 1885
gtgccttact gaaagttttt gggaattta caagagtact gattacatga ttatctggag 1945
aaaataagat gtctttgaaa tacatgttgg cttcaagaaa acagttttta cgttttccta 2005
aaatgaaatc ttttgagggtg agcttatggc atcaacacat ggttgatgag gaagctgagt 2065
tgcattagtg cacatgattt ccagtcaggt catgggaaat gaacagagac agtgacatct 2125
ttgtagctgc tcctttgtga ggcacttctt tcttgagatg actccatgca caaatataac 2185
agggatcatt gggaatgaca ccatcacagc caccaagntt attgggttac tgataat 2242

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<210> 142
<211> 2323
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (100)..(1023)

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<220>
<221> misc_feature
<222> (1)...(2323)
<223> n = a,t,c or g

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<400> 142
gaatgccttt tagtgccttg cttcctgaac tagctcacag tagcccggcg gccaggggca 60

atccgaccac atttcactct caccgctgta ggaatccag   atg cag gcc aag tac 114
                                   Met Gln Ala Lys Tyr
                                   1           5

agc agc acg agg gac atg ctg gat gat gat ggg gac acc acc atg agc 162
Ser Ser Thr Arg Asp Met Leu Asp Asp Asp Gly Asp Thr Thr Met Ser
      10                15                20

```

ctg cat tct caa gcc tct gcc aca act cgg cat cca gag ccc cgg cgc Leu His Ser Gln Ala Ser Ala Thr Thr Arg His Pro Glu Pro Arg Arg 25 30 35	210
aca gag cac agg gct ccc tct tca acg tgg cga cca gtg gcc ctg acc Thr Glu His Arg Ala Pro Ser Ser Thr Trp Arg Pro Val Ala Leu Thr 40 45 50	258
ctg ctg act ttg tgc ttg gtg ctg ctg ata ggg ctg gca gcc ctg ggg Leu Leu Thr Leu Cys Leu Val Leu Leu Ile Gly Leu Ala Ala Leu Gly 55 60 65	306
ctt ttg ttt ttt cag tac tac cag ctc tcc aat act ggt caa gac acc Leu Leu Phe Phe Gln Tyr Tyr Gln Leu Ser Asn Thr Gly Gln Asp Thr 70 75 80 85	354
att tct caa atg gaa gaa aga tta gga aat acg tcc caa gag ttg caa Ile Ser Gln Met Glu Glu Arg Leu Gly Asn Thr Ser Gln Glu Leu Gln 90 95 100	402
tct ctt caa gtc cag aat ata aag ctt gca gga agt ctg cag cat gtg Ser Leu Gln Val Gln Asn Ile Lys Leu Ala Gly Ser Leu Gln His Val 105 110 115	450
gct gaa aaa ctc tgt cgt gag ctg tat aac aaa gct gga ggc tat aca Ala Glu Lys Leu Cys Arg Glu Leu Tyr Asn Lys Ala Gly Gly Tyr Thr 120 125 130	498
aga aac atg gtg cca gca tct gct tct tct gag agc ctc agg cag ctt Arg Asn Met Val Pro Ala Ser Ala Ser Ser Glu Ser Leu Arg Gln Leu 135 140 145	546
cca cac atg ggg gaa agt gca gca gca cac agg tgc agc cct tgt aca Pro His Met Gly Glu Ser Ala Ala Ala His Arg Cys Ser Pro Cys Thr 150 155 160 165	594
gaa caa tgg aaa tgg cat gga gac aat tgc tac cag ttc tat aaa gac Glu Gln Trp Lys Trp His Gly Asp Asn Cys Tyr Gln Phe Tyr Lys Asp 170 175 180	642
agc aaa agt tgg gag gac tgt aaa tat ttc tgc ctt agt gaa aac tct Ser Lys Ser Trp Glu Asp Cys Lys Tyr Phe Cys Leu Ser Glu Asn Ser 185 190 195	690
acc atg ctg aag ata aac aaa caa gaa gac ctg gaa ttt gcc gcg tct Thr Met Leu Lys Ile Asn Lys Gln Glu Asp Leu Glu Phe Ala Ala Ser 200 205 210	738
cag agc tac tct gag ttt ttc tac tct tat tgg aca ggg ctt ttg cgc Gln Ser Tyr Ser Glu Phe Phe Tyr Ser Tyr Trp Thr Gly Leu Leu Arg 215 220 225	786
cct gac agt ggc aag gcc tgg ctg tgg atg gat gga acc cct ttc act Pro Asp Ser Gly Lys Ala Trp Leu Trp Met Asp Gly Thr Pro Phe Thr 230 235 240 245	834
tct gaa ctg ttc cat att ata ata gat gtc acc agc cca aga agc aga	882

ccatcacagc caccaagntt attgggttac tgataat

2323

<210> 143
<211> 971
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (72)..(767)

<400> 143

cggccgcgctc gacagacaga cgggagcagt gcttttccta gagtagagta tgctctataa	60
atgtctactg a atg ttg act ggt gtt gga tgt ctt gtc tcc tca gaa tct	110
Met Leu Thr Gly Val Gly Cys Leu Val Ser Ser Glu Ser	
1 5 10	
ctg agc tgc gtg cag tgt aat tca tgg gaa aaa tcc tgt gtc aac agc	158
Leu Ser Cys Val Gln Cys Asn Ser Trp Glu Lys Ser Cys Val Asn Ser	
15 20 25	
att gcc tct gaa tgt ccc tca cat gcc aac acc agc tgt atc agc tcc	206
Ile Ala Ser Glu Cys Pro Ser His Ala Asn Thr Ser Cys Ile Ser Ser	
30 35 40 45	
tca gcc agc tcc tct cta gag aca cca gtc aga tta tac cag aat atg	254
Ser Ala Ser Ser Ser Leu Glu Thr Pro Val Arg Leu Tyr Gln Asn Met	
50 55 60	
ttc tgc tca gcg gag aac tgc agt gag gag aca cac att aca gcc ttc	302
Phe Cys Ser Ala Glu Asn Cys Ser Glu Glu Thr His Ile Thr Ala Phe	
65 70 75	
act gtc cac gtg tct gct gaa gaa cac ttt cat ttt gta agc cag tgc	350
Thr Val His Val Ser Ala Glu Glu His Phe His Phe Val Ser Gln Cys	
80 85 90	
tgc caa gga aag gaa tgc agc aac acc agc gat gcc ctg gac cct ccc	398
Cys Gln Gly Lys Glu Cys Ser Asn Thr Ser Asp Ala Leu Asp Pro Pro	
95 100 105	
ctg aag aac gtg tcc agc aac gca gag tgc cct gct tgt tat gaa tct	446
Leu Lys Asn Val Ser Ser Asn Ala Glu Cys Pro Ala Cys Tyr Glu Ser	
110 115 120 125	
aat gga act tcc tgt cgt ggg aag ccc tgg aaa tgc tat gaa gaa gaa	494
Asn Gly Thr Ser Cys Arg Gly Lys Pro Trp Lys Cys Tyr Glu Glu Glu	
130 135 140	
cag tgt gtc ttt cta gtt gca gaa ctt aag aat gac att gag tct aag	542
Gln Cys Val Phe Leu Val Ala Glu Leu Lys Asn Asp Ile Glu Ser Lys	
145 150 155	

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agt ctc gtg ctg aaa ggc tgt tcc aac gtc agt aac gcc acc tgt cag      590
Ser Leu Val Leu Lys Gly Cys Ser Asn Val Ser Asn Ala Thr Cys Gln
      160                      165                      170

ttc ctg tct ggt gaa aac aag act ctt gga gga gtc atc ttt cga aag      638
Phe Leu Ser Gly Glu Asn Lys Thr Leu Gly Gly Val Ile Phe Arg Lys
      175                      180                      185

ttt gag tgt gca aat gta aac agc tta acc ccc acg tct gca cca acc      686
Phe Glu Cys Ala Asn Val Asn Ser Leu Thr Pro Thr Ser Ala Pro Thr
      190                      195                      200                      205

act tcc cac aac gtg ggc tcc aaa gct tcc ctc tac ctc ttg gcc ctt      734
Thr Ser His Asn Val Gly Ser Lys Ala Ser Leu Tyr Leu Leu Ala Leu
      210                      215                      220

gcc agc ctc ctt ctt cgg gga ctg ctg ccc tga ggtcctgg ggctgcactt      785
Ala Ser Leu Leu Leu Arg Gly Leu Leu Pro *
      225                      230

tgcccagcac cccatttctg cttctctgag gtccagagca cccctgcgg tgctgacacc      845

ctctttccct gctctgcccc gtttaactgc ccagtaagtg ggagtcacag gtctccaggc      905

aatgccgaca gctgccttgt tcttcattat taaagcactg gttcattcac tgcccaaaaa      965
aaaaaa                                                                971

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<210> 144
<211> 1689
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (354) .. (1370)

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<220>
<221> misc_feature
<222> (1) ... (1689)
<223> n = a,t,c or g

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<400> 144
cctgaatgct ttacgtaccg gcccggaatt cccgggtcga cccacgcgtc cgctcggcca      60

ccgaagccac cctgccctgg tgaaagggtc cccgcaccgc ccggtgctcc ccattctgct      120

ggcgttgtgc gcagagctgg aaagcatggc tgttataaat gaattctgat tttggggagc      180

agatgccaac ttagagcctc gtaccaatct ctctgtcttt aaaagatgag gtgacttggt      240

gattttcctg gaaaattata ggtgcccagc taagacctga atgccatcac cctccccagg      300

gctctgcagt tttctcgtgg tgaacccttg atggatttgt tgttgcttga gaa atg      356

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[illegible]

gcg	atg	atc	gaa	ttg	ggg	ttt	gga	aga	cag	aat	ttt	cat	cca	tta	aag	404
Ala	Met	Ile	Glu	Leu	Gly	Phe	Gly	Arg	Gln	Asn	Phe	His	Pro	Leu	Lys	
			5				10			15						
agg	aag	agt	tca	ttg	ctg	ttg	aaa	ctc	ata	gct	gtt	gtc	ttt	gct	gtg	452
Arg	Lys	Ser	Ser	Leu	Leu	Leu	Lys	Leu	Ile	Ala	Val	Val	Phe	Ala	Val	
			20				25			30						
ctt	cta	ttt	tgt	gaa	ttt	tta	atc	tat	tac	tta	gcg	atc	ttt	cag	tgt	500
Leu	Leu	Phe	Cys	Glu	Phe	Leu	Ile	Tyr	Tyr	Leu	Ala	Ile	Phe	Gln	Cys	
			35				40			45						
aat	tgg	cct	gaa	gtg	aaa	acc	aca	gcc	tct	gat	ggg	gaa	cag	acc	aca	548
Asn	Trp	Pro	Glu	Val	Lys	Thr	Thr	Ala	Ser	Asp	Gly	Glu	Gln	Thr	Thr	
			50				55			60			65			
cgt	gag	cct	gtg	ctc	aaa	gcc	atg	ttt	ttg	gct	gac	acc	cat	ttg	ctt	596
Arg	Glu	Pro	Val	Leu	Lys	Ala	Met	Phe	Leu	Ala	Asp	Thr	His	Leu	Leu	
			70						75			80				
ggg	gaa	ttc	cta	ggc	cac	tgg	ctg	gac	aaa	tta	cga	agg	gaa	tgg	cag	644
Gly	Glu	Phe	Leu	Gly	His	Trp	Leu	Asp	Lys	Leu	Arg	Arg	Glu	Trp	Gln	
			85						90			95				
atg	gag	aga	gcg	ttc	cag	aca	gct	ctg	tgg	ttg	ctg	cag	ccg	gaa	gtc	692
Met	Glu	Arg	Ala	Phe	Gln	Thr	Ala	Leu	Trp	Leu	Leu	Gln	Pro	Glu	Val	
			100						105			110				
gtc	ttc	atc	ctg	ggg	gat	atc	ttt	gat	gaa	ggg	aag	tgg	agc	acc	cct	740
Val	Phe	Ile	Leu	Gly	Asp	Ile	Phe	Asp	Glu	Gly	Lys	Trp	Ser	Thr	Pro	
			115						120			125				
gag	gcc	tgg	gcg	gat	gat	gtg	gag	cgg	ttt	cag	aaa	atg	ttc	aga	cac	788
Glu	Ala	Trp	Ala	Asp	Asp	Val	Glu	Arg	Phe	Gln	Lys	Met	Phe	Arg	His	
			130						135			140			145	
cca	agt	cat	gta	cag	ctg	aag	gta	gtt	gct	gga	aac	cat	gac	att	ggc	836
Pro	Ser	His	Val	Gln	Leu	Lys	Val	Val	Ala	Gly	Asn	His	Asp	Ile	Gly	
			150						155			160				
ttc	cat	tat	gag	atg	aac	aca	tac	aaa	gta	gaa	cgc	ttt	gag	aaa	gtg	884
Phe	His	Tyr	Glu	Met	Asn	Thr	Tyr	Lys	Val	Glu	Arg	Phe	Glu	Lys	Val	
			165						170			175				
ttc	agc	tct	gaa	aga	ctg	ttt	tct	tgg	aaa	ggc	att	aac	ttt	gtg	atg	932
Phe	Ser	Ser	Glu	Arg	Leu	Phe	Ser	Trp	Lys	Gly	Ile	Asn	Phe	Val	Met	
			180						185			190				
gtc	aac	agc	gtg	gcg	ctg	aac	ggg	gat	ggc	tgt	ggc	atc	tgc	tct	gaa	980
Val	Asn	Ser	Val	Ala	Leu	Asn	Gly	Asp	Gly	Cys	Gly	Ile	Cys	Ser	Glu	
			195						200			205				
aca	gaa	gca	gag	ctc	att	gaa	gtt	tct	cac	aga	ctg	aac	tgc	tcc	cga	1028
Thr	Glu	Ala	Glu	Leu	Ile	Glu	Val	Ser	His	Arg	Leu	Asn	Cys	Ser	Arg	

210	215	220	225	
gag gca cgt ggc tcc agc cgg tgt gga cct ggg cct ctg ctg ccc acg				1076
Glu Ala Arg Gly Ser Ser Arg Cys Gly Pro Gly Pro Leu Leu Pro Thr				
	230	235	240	
tct gcc cct gtc ctc ctg cag cat tat cct ctg tat cgg aga agt gat				1124
Ser Ala Pro Val Leu Leu Gln His Tyr Pro Leu Tyr Arg Arg Ser Asp				
	245	250	255	
gct aac tgt tct ggg gaa gac gct gct cct gca gag gaa agg gac atc				1172
Ala Asn Cys Ser Gly Glu Asp Ala Ala Pro Ala Glu Glu Arg Asp Ile				
	260	265	270	
cca ttt aag gag aac tat gac gtg ctt tca cgg gag gca tca caa aag				1220
Pro Phe Lys Glu Asn Tyr Asp Val Leu Ser Arg Glu Ala Ser Gln Lys				
	275	280	285	
ctg ctg tgg tgg ctc cag ccg cgc ctg gtt ctc agt ggc cac acg cac				1268
Leu Leu Trp Trp Leu Gln Pro Arg Leu Val Leu Ser Gly His Thr His				
	290	295	300	305
agc gcc tgc gag gtg cac cac ggg ggc cga gtc ccc gag ctc agc gtc				1316
Ser Ala Cys Glu Val His His Gly Gly Arg Val Pro Glu Leu Ser Val				
	310	315	320	
cca tct ttc agt tgg agg aac aga aac aac ccc agt ttc atc atg gta				1364
Pro Ser Phe Ser Trp Arg Asn Arg Asn Asn Pro Ser Phe Ile Met Val				
	325	330	335	
ccg tga aagtttattt ttgtctgaaa gctttcataa gtatttaaata caacacagta				1420
Pro *				
atcaactatt taattgctgc aatcgggtcaa aatttataaaa agccacacac aaatttctct				1480
ccttctacac gtagctccat aactgcccc ttgccaaaca cccttccggg aaccaatcag				1540
catgacattc ctgggcagtt aatgtgagaa gcgagggcag ggcaccgtcc nagtggactt				1600
tatccttcag ggaggggcgt atcctctctc ttacactctg tgtgtgggta aatttctaaa				1660
gaacaccatt taatccatag ctatatcag				1689

<210> 145
 <211> 480
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> CDS
 <222> (104) .. (298)

 <400> 145


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gtt ttg gct ctg aaa tct aat ttt gag ttt agc aag gat gtc tgc att      319
Val Leu Ala Leu Lys Ser Asn Phe Glu Phe Ser Lys Asp Val Cys Ile
      40                      45                      50

gct cat gca aat gaa cta agc gtt cat tgg aat gac acc atc acc acc      367
Ala His Ala Asn Glu Leu Ser Val His Trp Asn Asp Thr Ile Thr Thr
      55                      60                      65                      70

caa atg aaa aga act ggc tgg aat att cat cag cct act aat gtc atc      415
Gln Met Lys Arg Thr Gly Trp Asn Ile His Gln Pro Thr Asn Val Ile
                        75                      80                      85

tcc caa ccc act ctc caa act cca tcc caa aaa agc atc cag ttc aga      463
Ser Gln Pro Thr Leu Gln Thr Pro Ser Gln Lys Ser Ile Gln Phe Arg
                        90                      95                      100

att gcc cac tgt tgg caa aga aag aat gtc act aat tta ttt aca ggg      511
Ile Ala His Cys Trp Gln Arg Lys Asn Val Thr Asn Leu Phe Thr Gly
                        105                      110                      115

agc aga tag cagggactta cagatgaacc aggcctgcg atttttg      557
Ser Arg *
      120

<210> 147
<211> 1190
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (172)..(1071)

<400> 147
gggaggggtct gaaccgataa ccctgcggta ccgctccgga attcccgggt cgaccacgc      60

gtccgggggt acacagccag gtgtcagatg tgtctctgct gatctgagtc tgcctgtggc      120

atggacctgc atcttccttg aagcatctcc agggctgaaa aatcactgac c atg gca      177
                               Met Ala
                               1

cca tgg tct cat cca tct gca cag ctg cag cca gtg gga gga gac gcc      225
Pro Trp Ser His Pro Ser Ala Gln Leu Gln Pro Val Gly Gly Asp Ala
      5                      10                      15

gtg agc cct gcc ctc atg gtt ctg ctc tgc ctc ggg ctg agt ctg ggc      273
Val Ser Pro Ala Leu Met Val Leu Leu Cys Leu Gly Leu Ser Leu Gly
      20                      25                      30

ccc agg acc cac gtg cag gca ggg aac ctc tcc aaa gcc acc ctc tgg      321
Pro Arg Thr His Val Gln Ala Gly Asn Leu Ser Lys Ala Thr Leu Trp
      35                      40                      45                      50

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gct gag cca ggc tct gtg atc agc cgg ggg aac tct gtg acc atc cgg	369
Ala Glu Pro Gly Ser Val Ile Ser Arg Gly Asn Ser Val Thr Ile Arg	
55 60 65	
tgt cag ggg acc ctg gag gcc cag gaa tac cgt ctg gtt aaa gag gga	417
Cys Gln Gly Thr Leu Glu Ala Gln Glu Tyr Arg Leu Val Lys Glu Gly	
70 75 80	
agc cca gaa ccc tgg gac aca cag aac cca ctg gag ccc aag aac aag	465
Ser Pro Glu Pro Trp Asp Thr Gln Asn Pro Leu Glu Pro Lys Asn Lys	
85 90 95	
gcc aga ttc tcc atc cca tcc atg aca gag cac cat gca ggg aga tac	513
Ala Arg Phe Ser Ile Pro Ser Met Thr Glu His His Ala Gly Arg Tyr	
100 105 110	
cgc tgt tac tac tac agc cct gca ggc tgg tca gag ccc agc gac ccc	561
Arg Cys Tyr Tyr Tyr Ser Pro Ala Gly Trp Ser Glu Pro Ser Asp Pro	
115 120 125 130	
ctg gag ctg gtg gtg aca gga ttc tac aac aaa ccc acc ctc tca gcc	609
Leu Glu Leu Val Val Thr Gly Phe Tyr Asn Lys Pro Thr Leu Ser Ala	
135 140 145	
ctg ccc agt cct gtg gtg acc tca gga gag aac gtg acc ctc cag tgt	657
Leu Pro Ser Pro Val Val Thr Ser Gly Glu Asn Val Thr Leu Gln Cys	
150 155 160	
ggc tca cgg ctg aga ttc gac agg ttc att ctg act gag gaa gga gac	705
Gly Ser Arg Leu Arg Phe Asp Arg Phe Ile Leu Thr Glu Glu Gly Asp	
165 170 175	
cac aag ctc tcc tgg acc ttg gac tca cag ctg acc ccc agt ggg cag	753
His Lys Leu Ser Trp Thr Leu Asp Ser Gln Leu Thr Pro Ser Gly Gln	
180 185 190	
ttc cag gcc ctg ttc cct gtg ggc cct gtg acc ccc agc cac agg tgg	801
Phe Gln Ala Leu Phe Pro Val Gly Pro Val Thr Pro Ser His Arg Trp	
195 200 205 210	
atg ctc aga tgc tat ggc tct cgc agg cat atc ctg cag gta tgg tca	849
Met Leu Arg Cys Tyr Gly Ser Arg Arg His Ile Leu Gln Val Trp Ser	
215 220 225	
gaa ccc agt gac ctc ctg gag att ccg gtc tca gga gca gct gat aac	897
Glu Pro Ser Asp Leu Leu Glu Ile Pro Val Ser Gly Ala Ala Asp Asn	
230 235 240	
ctc agt ccg tca caa aac aag tct gac tct ggg act gcc tca cac ctt	945
Leu Ser Pro Ser Gln Asn Lys Ser Asp Ser Gly Thr Ala Ser His Leu	
245 250 255	
cag gat tac gca gta gag aat ctc atc cgc atg ggc atg gcc ggc ttg	993
Gln Asp Tyr Ala Val Glu Asn Leu Ile Arg Met Gly Met Ala Gly Leu	
260 265 270	

atc ctg gtg gtc ctt ggg att ctg ata ttt cag gat tgg cac agc cag	1041
Ile Leu Val Val Leu Gly Ile Leu Ile Phe Gln Asp Trp His Ser Gln	
275 280 285 290	
aga agc ccc caa gct gca gct gga agg tga a cagaagagag aacaatgcac	1092
Arg Ser Pro Gln Ala Ala Ala Gly Arg *	
295 300	
cattgaatgc tggagccttg gaagcgaatc tgatggctcct aggaggttcg ggaagaccat	1152
ctgaggccta tgccatctgg actgtctgct ggcaattt	1190

<210> 148
 <211> 1260
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (156)..(626)

<400> 148	
ctggctagcg tttaaactta agcttggtac cgagctcgga tccactagtc cagtgtggtg	60
gaattccagc accccggagg tactccagca gcttgtctcc aatccaagct cccaatcacc	120
caccgccgca gccccctacg caggccacgc cactg atg cac acc aaa ccc aat	173
Met His Thr Lys Pro Asn	
1 5	
agc cag ggc cct ccc aac ccc atg gca ttg ccc agt gag cat gga ctt	221
Ser Gln Gly Pro Pro Asn Pro Met Ala Leu Pro Ser Glu His Gly Leu	
10 15 20	
gag cag cca tct cac acc cct ccc cag act cca acg ccc ccc agt act	269
Glu Gln Pro Ser His Thr Pro Pro Gln Thr Pro Thr Pro Pro Ser Thr	
25 30 35	
ccg ccc cta gga aaa cag aac ccc agt ctg cca gct cct cag acc ctg	317
Pro Pro Leu Gly Lys Gln Asn Pro Ser Leu Pro Ala Pro Gln Thr Leu	
40 45 50	
gca ggg ggt aac cct gaa act gca cag cca cat gct gga acc tta ccg	365
Ala Gly Gly Asn Pro Glu Thr Ala Gln Pro His Ala Gly Thr Leu Pro	
55 60 65 70	
aga ccg aga cca gta cca aag cca agg aac cgg ccc agc gtg ccc cca	413
Arg Pro Arg Pro Val Pro Lys Pro Arg Asn Arg Pro Ser Val Pro Pro	
75 80 85	
ccc ccc caa cct cct ggt gtc cac tca gct ggg gac agc agc ctc acc	461
Pro Pro Gln Pro Pro Gly Val His Ser Ala Gly Asp Ser Ser Leu Thr	
90 95 100	

aac aca gca cca aca gct tcc aag ata gta aca gac tcc aat tcc agg	509
Asn Thr Ala Pro Thr Ala Ser Lys Ile Val Thr Asp Ser Asn Ser Arg	
105 110 115	
gtt tca gaa ccg cat cgc agc atc ttt cct gaa atg cac tca gac tca	557
Val Ser Glu Pro His Arg Ser Ile Phe Pro Glu Met His Ser Asp Ser	
120 125 130	
gcc agc aaa gac gtg cct ggc cgc atc ctg ctg gat ata gac aat gat	605
Ala Ser Lys Asp Val Pro Gly Arg Ile Leu Leu Asp Ile Asp Asn Asp	
135 140 145 150	
acc gag agc act gcc ctg tga ag aaagcccttt cccagccctc caccacttcc	658
Thr Glu Ser Thr Ala Leu *	
155	
accctggcga gtggagcagg ggcaggcgaa cctctttctt tgcagaccga acagtgaaaa	718
gctttcagtg gaggacaaag gagggcctca ctgtgcggga cctggccttc tgcacggccc	778
aaggagaacc tggaggccac cactaaagct gaatgacctg tgtcttgaag aagttggctt	838
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tctccccagt cccctcagaa ccatgcccat ggatgggtgac tgctggctct gtcacctcat	1198
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gt	1260

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caagatgatg catggctgga caaaatctac agacgctatg cctggataaa acgccagctt	180

Thr Thr Ser Ser Gly Gly Leu Thr Ile Ser Ser Leu Leu Lys Glu Lys
 220 225 230

gag ggc tca gaa gta gcc aag ttc act ctg gag gag ctc tgc ctc atc 951
 Glu Gly Ser Glu Val Ala Lys Phe Thr Leu Glu Glu Leu Cys Leu Ile
 235 240 245

tgt aac atc ctg agc acg gca gag tac tgt ctg gcc acc acc cag cag 999
 Cys Asn Ile Leu Ser Thr Ala Glu Tyr Cys Leu Ala Thr Thr Gln Gln
 250 255 260

cta gaa gaa aaa ctc aaa gaa aaa gtg gat gta agt ctg att gaa cga 1047
 Leu Glu Glu Lys Leu Lys Glu Lys Val Asp Val Ser Leu Ile Glu Arg
 265 270 275 280

atc aat ctg act gga gag atg gac acg ttc agc acc gtc atc tcc agc 1095
 Ile Asn Leu Thr Gly Glu Met Asp Thr Phe Ser Thr Val Ile Ser Ser
 285 290 295

agt att cag ctg ctg gtt cag gat ctg gat gct gcc tgt gat cct gcc 1143
 Ser Ile Gln Leu Leu Val Gln Asp Leu Asp Ala Ala Cys Asp Pro Ala
 300 305 310

ctg act gcc atg agc aag atg cag tgg cag aac gtg gag cac gtt ggt 1191
 Leu Thr Ala Met Ser Lys Met Gln Trp Gln Asn Val Glu His Val Gly
 315 320 325

gac cag agc ccc tac gtc acc tct gtc att ctg cac atc aag cag aac 1239
 Asp Gln Ser Pro Tyr Val Thr Ser Val Ile Leu His Ile Lys Gln Asn
 330 335 340

gtc ccc atc atc cgt gac aac ctg gct tcc aca cgc aag tac ttc act 1287
 Val Pro Ile Ile Arg Asp Asn Leu Ala Ser Thr Arg Lys Tyr Phe Thr
 345 350 355 360

cag ttc tgc gtt aaa ttt gca aac tcc ttc att ccc aaa ttc atc acc 1335
 Gln Phe Cys Val Lys Phe Ala Asn Ser Phe Ile Pro Lys Phe Ile Thr
 365 370 375

cac ctc ttc aag tgc aag cca att agc atg gtg gga gca gaa cag gtg 1383
 His Leu Phe Lys Cys Lys Pro Ile Ser Met Val Gly Ala Glu Gln Val
 380 385 390

aga tgg acg tag tat caggcatttg cctggcagct tttgtttag atcaagcaca 1438
 Arg Trp Thr *
 395

tattcttcta gtccagatct acttggcagg aataaaattg atgatgtccc ctgtttgggg 1498

acagtataat gactcacccg gaaggtttct taattcggtc ttccatttat ttttaaaaat 1558

tttgtttgaa cgctactaa gttctgggtg caggggtataa cacagcaagc accatggaaa 1618

ggtccttgct cctagtgtc acactccaat aagaagaagt ggctgggccc ggcacagcgg 1678

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gctgggcatg ggggcaggct accggggagg ctgaggcagg agaatcactt gaacccggga 1858
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Met Ala Leu Ala Ser Leu Arg Asn Leu Tyr Thr Pro Asn
1 5 10
ata aag gtc agc cga ctg ctg att ttg gga ggt gcc aat att aat tac 156
Ile Lys Val Ser Arg Leu Leu Ile Leu Gly Gly Ala Asn Ile Asn Tyr
15 20 25
cgg aca gag gtt tta aat aat gct cca att cta tgt gtt cag tcc cat 204
Arg Thr Glu Val Leu Asn Asn Ala Pro Ile Leu Cys Val Gln Ser His
30 35 40 45
ctt ggt tac aca gaa atg gta gcc ctg ctg ctg gag ttc ggg gcc aac 252
Leu Gly Tyr Thr Glu Met Val Ala Leu Leu Leu Glu Phe Gly Ala Asn
50 55 60
gtg gat gcc tct tct gaa agt ggc ctg act ccc ctg gga tat gct gca 300
Val Asp Ala Ser Ser Glu Ser Gly Leu Thr Pro Leu Gly Tyr Ala Ala
65 70 75
gca gca ggg tac ctg agc att gtg gtg ctg ctg tgc aag aaa cgg gcc 348
Ala Ala Gly Tyr Leu Ser Ile Val Val Leu Leu Cys Lys Lys Arg Ala
80 85 90
aag gtg gat cat ttg gat aag aac ggg cag tgt gct ttg gtt cat gct 396
Lys Val Asp His Leu Asp Lys Asn Gly Gln Cys Ala Leu Val His Ala
95 100 105
gca ctc cga ggt cat ctg gag gtt gtc aag ttt ttg att cag tgt gac 444
Ala Leu Arg Gly His Leu Glu Val Val Lys Phe Leu Ile Gln Cys Asp
110 115 120 125
tgg acg atg gcc ggc cag cag caa gga gta ttt aag aag agc cat gcc 492
Trp Thr Met Ala Gly Gln Gln Gln Gly Val Phe Lys Lys Ser His Ala

130	135	140	
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Ile Gln Gln Ala Leu Ile Ala Ala Ala Ser Met Gly Tyr Thr Glu Val			
145	150	155	
aga agt agg caa tag gattgttttt tcaagctctg tattgaagga cccaggaaac			595
Arg Ser Arg Gln *			
160			
caggagaaaa gattgcacga agacaaaatt gccaaccaaa ttaatgtgaa ttcgtgatcg			655
ctgctctgaa taataaggag attaaactcc atgaagcact ttactcaaat gccaaagtcc			715
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tctccatggt ttcctccctg tttaacagac agtggcacca aggctcaaag agatgaatta			835
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cagaaggacc agatttgagt cccagcctcg ctattcatta actctagccc ttgaacaatt			955
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acaaggctgt tgtaagggat gcttggtaaa ctgttaaaca ttatacagtt tatttattaa			1075
tgataataac aataatagtg gcaaatgtag ggaattggta gtgtgctagg aaatgtttaa			1135
caaccaactg tgaagagggg tgtgggggtg aacaggggtg tgtgtttgtg tgtgcatacg			1195
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	Met Phe Asp Glu Ala Ser Ala		
	1 5		
atc act tcc tac gag aag ttt cta acc ccc gag gag ccc ttt cca ctc			159
Ile Thr Ser Tyr Glu Lys Phe Leu Thr Pro Glu Glu Pro Phe Pro Leu			
10 15 20			
ctg gga cct cct cgc ggg gtg ggc acc tgc ccg agc gag gag ccg ggc			207
Leu Gly Pro Pro Arg Gly Val Gly Thr Cys Pro Ser Glu Glu Pro Gly			

25	30	35	
tgc ctg gac atc agc gac ttc ggc tgc cag ctg tcc tcc tgc cat cgc			255
Cys Leu Asp Ile Ser Asp Phe Gly Cys Gln Leu Ser Ser Cys His Arg			
40	45	50	55
acc gac ccg ctc cac cgc ttc cac acc aac agg tgg aac cta act tct			303
Thr Asp Pro Leu His Arg Phe His Thr Asn Arg Trp Asn Leu Thr Ser			
	60	65	70
tgt gga aca agt gtt gcc agc tca gaa ggc agt gag gag ctg ttt tca			351
Cys Gly Thr Ser Val Ala Ser Ser Glu Gly Ser Glu Glu Leu Phe Ser			
	75	80	85
tct gtg tct gtt gga gat caa gat gat tgc tat tcc ctg tta gat gat			399
Ser Val Ser Val Gly Asp Gln Asp Asp Cys Tyr Ser Leu Leu Asp Asp			
	90	95	100
cag gac ttc act tct ttt gat tta ttt cct gag ggg agt gtc tgc agt			447
Gln Asp Phe Thr Ser Phe Asp Leu Phe Pro Glu Gly Ser Val Cys Ser			
	105	110	115
gat gtc tct tct tct att agc act tac tgg gat tgg tca gat agc gag			495
Asp Val Ser Ser Ser Ile Ser Thr Tyr Trp Asp Trp Ser Asp Ser Glu			
	120	125	130
ttt gaa tgg cag tta cca ggc agt gac att gcc agt ggg agt gat gta			543
Phe Glu Trp Gln Leu Pro Gly Ser Asp Ile Ala Ser Gly Ser Asp Val			
	140	145	150
ctt tct gat gtc ata ccc agt att cca agt tca cct tgc ctg ctt cct			591
Leu Ser Asp Val Ile Pro Ser Ile Pro Ser Ser Pro Cys Leu Leu Pro			
	155	160	165
aaa aag aaa aac aag cac cgg aat tta gat gaa ctc cct tgg agt gca			639
Lys Lys Lys Asn Lys His Arg Asn Leu Asp Glu Leu Pro Trp Ser Ala			
	170	175	180
atg aca aat gat gag cag gtg gaa tat att gag tat ctg agt cgg aaa			687
Met Thr Asn Asp Glu Gln Val Glu Tyr Ile Glu Tyr Leu Ser Arg Lys			
	185	190	195
gtg agt act gag atg ggt ctt cgg gag caa ctt gat att att aag atc			735
Val Ser Thr Glu Met Gly Leu Arg Glu Gln Leu Asp Ile Ile Lys Ile			
	200	205	210
att gat cct tct gct cag atc tcc cct aca gac agg gag ttt att att			783
Ile Asp Pro Ser Ala Gln Ile Ser Pro Thr Asp Arg Glu Phe Ile Ile			
	220	225	230
gaa ctt aac tgt ctc aca gat gaa aaa ctg aag cag gtc aga aac tat			831
Glu Leu Asn Cys Leu Thr Asp Glu Lys Leu Lys Gln Val Arg Asn Tyr			
	235	240	245
atc aag gaa cat agc cct cgc caa cgg cct gca aga gag gcc tgg aag			879
Ile Lys Glu His Ser Pro Arg Gln Arg Pro Ala Arg Glu Ala Trp Lys			
	250	255	260

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aga agc aac ttt agt tgt gca agc acc agt gga gtg agc ggt gcc agt      927
Arg Ser Asn Phe Ser Cys Ala Ser Thr Ser Gly Val Ser Gly Ala Ser
265                               270                               275

gcc agc gcc agc agc agc agt gcc agc atg gtc agt tct gca agc agc      975
Ala Ser Ala Ser Ser Ser Ser Ala Ser Met Val Ser Ser Ala Ser Ser
280                               285                               290                               295

agt ggg tcc agt gtt gga aac tct gct tca aac tcc agt gcc aac atg      1023
Ser Gly Ser Ser Val Gly Asn Ser Ala Ser Asn Ser Ser Ala Asn Met
300                               305                               310

agt cga gca cac agt gac agc aac ctg tct gca agt gca gca gag cgg      1071
Ser Arg Ala His Ser Asp Ser Asn Leu Ser Ala Ser Ala Ala Glu Arg
315                               320                               325

att cgg gat tca aaa aag cga tcc aag cag cgg aag tta cag cag aag      1119
Ile Arg Asp Ser Lys Lys Arg Ser Lys Gln Arg Lys Leu Gln Gln Lys
330                               335                               340

gcc ttc cgc aag agg cag ctg aag gag cag agg cag gcc cgg aag gag      1167
Ala Phe Arg Lys Arg Gln Leu Lys Glu Gln Arg Gln Ala Arg Lys Glu
345                               350                               355

agg ctc agt ggg ctc ttc ctt aac gaa gag gtg ctg tcc ttg aaa gtg      1215
Arg Leu Ser Gly Leu Phe Leu Asn Glu Glu Val Leu Ser Leu Lys Val
360                               365                               370                               375

act gag gaa gac cat gaa gca gat gtt gat gtt ttg atg taa taagggt      1264
Thr Glu Glu Asp His Glu Ala Asp Val Asp Val Leu Met *
380                               385

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aaaaaaaaa a                                                                1335

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gatgcaggaa ttcattctaat tttcactgcc gggcgaggtg tgagagccct agcatctgaa      180

agtggtcgac ttgcgagttg tt atg gag aaa act tgt ata gat gca ctt cct      232

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Met Glu Lys Thr Cys Ile Asp Ala Leu Pro																
1				5				10								
ctt	act	atg	aat	tct	tca	gaa	aag	caa	gag	act	gta	tgt	att	ttt	gga	280
Leu	Thr	Met	Asn	Ser	Ser	Glu	Lys	Gln	Glu	Thr	Val	Cys	Ile	Phe	Gly	
15				20				25								
act	ggt	gat	ttt	gga	aga	tca	ctg	gga	ttg	aaa	atg	ctc	cag	tgt	ggt	328
Thr	Gly	Asp	Phe	Gly	Arg	Ser	Leu	Gly	Leu	Lys	Met	Leu	Gln	Cys	Gly	
30				35				40								
tat	tct	gtt	gtt	ttt	gga	agt	cga	aac	ccc	cag	aag	acc	acc	cta	ctg	376
Tyr	Ser	Val	Val	Phe	Gly	Ser	Arg	Asn	Pro	Gln	Lys	Thr	Thr	Leu	Leu	
45				50				55								
ccc	agt	ggt	gca	gaa	gtc	ttg	agc	tat	tca	gaa	gca	gcc	aag	aag	tct	424
Pro	Ser	Gly	Ala	Glu	Val	Leu	Ser	Tyr	Ser	Glu	Ala	Ala	Lys	Lys	Ser	
60				65				70								
ggc	atc	ata	atc	ata	gca	atc	cac	aga	gag	cat	tat	gat	ttt	ctc	aca	472
Gly	Ile	Ile	Ile	Ile	Ala	Ile	His	Arg	Glu	His	Tyr	Asp	Phe	Leu	Thr	
75				80				85				90				
gaa	tta	act	gag	gtt	ctc	aat	gga	aaa	ata	ttg	gta	gac	atc	agc	aac	520
Glu	Leu	Thr	Glu	Val	Leu	Asn	Gly	Lys	Ile	Leu	Val	Asp	Ile	Ser	Asn	
95				100				105								
aac	ctc	aaa	atc	aat	caa	tat	cca	gaa	tct	aat	gca	gag	tac	ctt	gct	568
Asn	Leu	Lys	Ile	Asn	Gln	Tyr	Pro	Glu	Ser	Asn	Ala	Glu	Tyr	Leu	Ala	
110				115				120								
cat	ttg	gtg	cca	gga	gcc	cac	gtg	gta	aaa	gca	ttt	aac	acc	atc	tca	616
His	Leu	Val	Pro	Gly	Ala	His	Val	Val	Lys	Ala	Phe	Asn	Thr	Ile	Ser	
125				130				135								
gcc	tgg	gct	ctc	cag	tca	gga	gca	ctg	gat	gca	agt	cgg	cag	gtg	ttt	664
Ala	Trp	Ala	Leu	Gln	Ser	Gly	Ala	Leu	Asp	Ala	Ser	Arg	Gln	Val	Phe	
140				145				150								
gtg	tgt	gga	aat	gac	agc	aaa	gcc	aag	caa	aga	gtg	atg	gat	att	gtt	712
Val	Cys	Gly	Asn	Asp	Ser	Lys	Ala	Lys	Gln	Arg	Val	Met	Asp	Ile	Val	
155				160				165				170				
cgt	aat	ctt	gga	ctt	act	cca	atg	gat	caa	gga	tca	ctc	atg	gca	gcc	760
Arg	Asn	Leu	Gly	Leu	Thr	Pro	Met	Asp	Gln	Gly	Ser	Leu	Met	Ala	Ala	
175				180				185								
aaa	gaa	att	gaa	aag	tac	ccc	ctg	cag	cta	ttt	cca	atg	tgg	agg	ttc	808
Lys	Glu	Ile	Glu	Lys	Tyr	Pro	Leu	Gln	Leu	Phe	Pro	Met	Trp	Arg	Phe	
190				195				200								
ccc	ttc	tat	ttg	tct	gct	gtg	ctg	tgt	gtc	ttc	ttg	ttt	ttc	tat	tgt	856
Pro	Phe	Tyr	Leu	Ser	Ala	Val	Leu	Cys	Val	Phe	Leu	Phe	Phe	Tyr	Cys	
205				210				215								
gtt	ata	aga	gac	gta	atc	tac	cct	tat	gtt	tat	gaa	aag	aaa	gat	aat	904
Val	Ile	Arg	Asp	Val	Ile	Tyr	Pro	Tyr	Val	Tyr	Glu	Lys	Lys	Asp	Asn	

220				225				230								
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Thr	Phe	Arg	Met	Ala	Ile	Ser	Ile	Pro	Asn	Arg	Ile	Phe	Pro	Ile	Thr	
235					240					245					250	
gca	ctt	aca	ctg	ctt	gct	ttg	gtt	tac	ctc	cct	ggc	gtt	att	gct	gcc	1000
Ala	Leu	Thr	Leu	Leu	Ala	Leu	Val	Tyr	Leu	Pro	Gly	Val	Ile	Ala	Ala	
				255					260					265		
att	cta	caa	ctg	tac	cga	ggc	aca	aaa	tac	cgt	cga	ttc	cca	gac	tgg	1048
Ile	Leu	Gln	Leu	Tyr	Arg	Gly	Thr	Lys	Tyr	Arg	Arg	Phe	Pro	Asp	Trp	
			270					275					280			
ctt	gac	cac	tgg	atg	ctt	tgc	cga	aag	cag	ctt	ggc	ttg	gta	gct	ctg	1096
Leu	Asp	His	Trp	Met	Leu	Cys	Arg	Lys	Gln	Leu	Gly	Leu	Val	Ala	Leu	
		285					290					295				
gga	ttt	gcc	ttc	ctt	cat	gtc	ctc	tac	aca	ctt	gtg	att	cct	att	cga	1144
Gly	Phe	Ala	Phe	Leu	His	Val	Leu	Tyr	Thr	Leu	Val	Ile	Pro	Ile	Arg	
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Tyr	Tyr	Val	Arg	Trp	Arg	Leu	Gly	Asn	Leu	Thr	Val	Thr	Gln	Ala	Ile	
315					320					325					330	
ctc	aag	aag	gag	aat	cca	ttt	agc	acc	tcc	tca	gcc	tgg	ctc	agt	gat	1240
Leu	Lys	Lys	Glu	Asn	Pro	Phe	Ser	Thr	Ser	Ser	Ala	Trp	Leu	Ser	Asp	
				335					340					345		
tca	tat	gtg	gct	ttg	gga	ata	ctt	ggg	ttt	ttt	ctg	ttt	gta	ctc	ttg	1288
Ser	Tyr	Val	Ala	Leu	Gly	Ile	Leu	Gly	Phe	Phe	Leu	Phe	Val	Leu	Leu	
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gga	atc	act	tct	ttg	cca	tct	gtt	agc	aat	gca	gtc	aac	tgg	aga	gag	1336
Gly	Ile	Thr	Ser	Leu	Pro	Ser	Val	Ser	Asn	Ala	Val	Asn	Trp	Arg	Glu	
		365					370					375				
ttc	cga	ttt	gtc	cag	tcc	aaa	ctg	ggc	tat	ttg	acc	ctg	atc	ttg	tgt	1384
Phe	Arg	Phe	Val	Gln	Ser	Lys	Leu	Gly	Tyr	Leu	Thr	Leu	Ile	Leu	Cys	
	380					385					390					
aca	gcc	cac	acc	ctg	gtg	tac	ggc	ggg	aag	aga	ttc	ctc	agc	cct	tca	1432
Thr	Ala	His	Thr	Leu	Val	Tyr	Gly	Gly	Lys	Arg	Phe	Leu	Ser	Pro	Ser	
395					400					405					410	
aat	ctc	aga	tgg	tat	ctt	cct	gca	gcc	tac	gtg	tta	ggg	ctt	atc	att	1480
Asn	Leu	Arg	Trp	Tyr	Leu	Pro	Ala	Ala	Tyr	Val	Leu	Gly	Leu	Ile	Ile	
				415					420					425		
cct	tgc	act	gtg	ctg	gtg	atc	aag	ttt	gtc	cta	atc	atg	cca	tgt	gta	1528
Pro	Cys	Thr	Val	Leu	Val											

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cac tag aaaaagcatt gaatggaaaa tcaatattta aaacaaagtt caatttagct 1632
His *
460

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ctggaagaga acaccatttt atctcagggt agtgaagaat cagtgcaggt ccctgactct 1812
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gtttccttgt tatgggcaac atgcatgacc taatgtcttg caaatccaa tagaagtatt 1932
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cttctcccca ggaccccagg gccaaactccc cctgccggcc ctctgccatc aaattggcag 180
tggtccagg ggagtccctt ggggatgggg gaccactgtt ggggaccctt ctgcgtgcac 240
ccctgtagtt ggggaagcag gacagggggc tggggagacg gaagggcgcc aggggttag 300
agagg      atg gtg gac gtt gtt gga ctt gaa agg gaa aca ggc cct cgg 347
            Met Val Asp Val Val Gly Leu Glu Arg Glu Thr Gly Pro Arg
            1             5             10

gga agc ccc tgg cca ggc ctg cct ctc ccc tcc ctg gtg ggc cca gcg 395
Gly Ser Pro Trp Pro Gly Leu Pro Leu Pro Ser Leu Val Gly Pro Ala
15             20             25             30

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ccc ctg ctc act tgt ctc tgc cca cag tgc ctg tct gtg gag gac gcc	443
Pro Leu Leu Thr Cys Leu Cys Pro Gln Cys Leu Ser Val Glu Asp Ala	
35 40 45	
ctg ggc ctg ggc gag cct gag ggg tca ggg ctg ccc ccg ggc ccg gtc	491
Leu Gly Leu Gly Glu Pro Glu Gly Ser Gly Leu Pro Pro Gly Pro Val	
50 55 60	
ctg gag gcc agg tac gtc gcc cgc ctc agt gcc gcc gcc gtc ctg tac	539
Leu Glu Ala Arg Tyr Val Ala Arg Leu Ser Ala Ala Ala Val Leu Tyr	
65 70 75	
ctc agc aac ccc gag ggc acc tgt gag gac gct cgg gct ggc ctc tgg	587
Leu Ser Asn Pro Glu Gly Thr Cys Glu Asp Ala Arg Ala Gly Leu Trp	
80 85 90	
gcc tct cat gca gac cac ctc ctg gcc ctg ctc gag agc ccc aag gcc	635
Ala Ser His Ala Asp His Leu Leu Ala Leu Leu Glu Ser Pro Lys Ala	
95 100 105 110	
ctg acc ccg ggc ctg agc tgg ctg ctg cag agg atg cag gcc cgg gct	683
Leu Thr Pro Gly Leu Ser Trp Leu Leu Gln Arg Met Gln Ala Arg Ala	
115 120 125	
gcc ggc cag acc ccc aag acg gcc tgc gta gat atc cct cag ctg ctg	731
Ala Gly Gln Thr Pro Lys Thr Ala Cys Val Asp Ile Pro Gln Leu Leu	
130 135 140	
gag gag gcg gtg ggg gcg ggg gct ccg ggc agt gct ggc ggc gtc ctg	779
Glu Glu Ala Val Gly Ala Gly Ala Pro Gly Ser Ala Gly Gly Val Leu	
145 150 155	
gct gcc ctg ctg gac cat gtc agg agc ggg tct tgc ttc cac gcc ttg	827
Ala Ala Leu Leu Asp His Val Arg Ser Gly Ser Cys Phe His Ala Leu	
160 165 170	
ccg agc cct cag tac ttc gtg gac ttt gtg ttc cag cag cac agc agc	875
Pro Ser Pro Gln Tyr Phe Val Asp Phe Val Phe Gln Gln His Ser Ser	
175 180 185 190	
gag gtc cct atg acg ctg gcc gag ctg tca gcc ttg atg cag cgc ctg	923
Glu Val Pro Met Thr Leu Ala Glu Leu Ser Ala Leu Met Gln Arg Leu	
195 200 205	
ggg gtg ggc agg gag gcc cac agt gac cac agt cat cgg cac agg gga	971
Gly Val Gly Arg Glu Ala His Ser Asp His Ser His Arg His Arg Gly	
210 215 220	
gcc agc agc ccg gac cct gtg ccc ctc atc agc tcc agc aac agc tcc	1019
Ala Ser Ser Arg Asp Pro Val Pro Leu Ile Ser Ser Ser Asn Ser Ser	
225 230 235	
agt gtg tgg gac acg gta tgc ctg agt gcc agg gac gtg atg gct gca	1067
Ser Val Trp Asp Thr Val Cys Leu Ser Ala Arg Asp Val Met Ala Ala	
240 245 250	

tat gga ctg tcg gaa cag gct ggg gtg acc ccg gag gcc tgg gcc caa	1115
Tyr Gly Leu Ser Glu Gln Ala Gly Val Thr Pro Glu Ala Trp Ala Gln	
255 260 265 270	
ctg agc cct gcc ctg ctc caa cag cag ctg agt gga gcc tgc acc tcc	1163
Leu Ser Pro Ala Leu Leu Gln Gln Gln Leu Ser Gly Ala Cys Thr Ser	
275 280 285	
cag tcc agg ccc ccc gtc cag gac cag ctc agc cag tca gag agg tat	1211
Gln Ser Arg Pro Pro Val Gln Asp Gln Leu Ser Gln Ser Glu Arg Tyr	
290 295 300	
ctg tac ggc tcc ctg gcc acg ctg ctc atc tgc ctc tgc gcg gtc ttt	1259
Leu Tyr Gly Ser Leu Ala Thr Leu Leu Ile Cys Leu Cys Ala Val Phe	
305 310 315	
ggc ctc ctg ctg ctg acc tgc act ggc tgc agg ggg gtc gcc cac tac	1307
Gly Leu Leu Leu Leu Thr Cys Thr Gly Cys Arg Gly Val Ala His Tyr	
320 325 330	
atc ctg cag acc ttc ctg agc ctg gca gtg ggt gca ctc act ggg gac	1355
Ile Leu Gln Thr Phe Leu Ser Leu Ala Val Gly Ala Leu Thr Gly Asp	
335 340 345 350	
gct gtc ctg cat ctg acg ccc aag gtg ctg ggg ctg cat aca cac agc	1403
Ala Val Leu His Leu Thr Pro Lys Val Leu Gly Leu His Thr His Ser	
355 360 365	
gaa gag ggc ctc agc cca cag ccc acc tgg cgc ctc ctg gct atg ctg	1451
Glu Glu Gly Leu Ser Pro Gln Pro Thr Trp Arg Leu Leu Ala Met Leu	
370 375 380	
gcc ggg ctc tac gcc ttc ttc ctg ttt gag aac ctc ttc aat ctc ctg	1499
Ala Gly Leu Tyr Ala Phe Phe Leu Phe Glu Asn Leu Phe Asn Leu Leu	
385 390 395	
ctg ccc agg gac ccg gag gac ctg gag gac ggg ccc tgc ggc cac agc	1547
Leu Pro Arg Asp Pro Glu Asp Leu Glu Asp Gly Pro Cys Gly His Ser	
400 405 410	
agc cat agc cac ggg ggc cac agc cac ggt gtg tcc ctg cag ctg gca	1595
Ser His Ser His Gly Gly His Ser His Gly Val Ser Leu Gln Leu Ala	
415 420 425 430	
ccc agc gag ctc cgg cag ccc aag ccc ccc cac gag ggc tcc cgc gca	1643
Pro Ser Glu Leu Arg Gln Pro Lys Pro Pro His Glu Gly Ser Arg Ala	
435 440 445	
gac ctg gtg gcg gag gag agc ccg gag ctg ctg aac cct gag ccc agg	1691
Asp Leu Val Ala Glu Glu Ser Pro Glu Leu Leu Asn Pro Glu Pro Arg	
450 455 460	
aga ctg agc cca gag ttg agg cta ctg ccc tat atg atc act ctg ggc	1739
Arg Leu Ser Pro Glu Leu Arg Leu Leu Pro Tyr Met Ile Thr Leu Gly	
465 470 475	
gac gcc gtg cac aac ttc gcc gac ggg ctg gcc gtg ggc gcc gcc ttc	1787

Asp	Ala	Val	His	Asn	Phe	Ala	Asp	Gly	Leu	Ala	Val	Gly	Ala	Ala	Phe		
480						485					490						
gcg	tcc	tcc	tgg	aag	acc	ggg	ctg	gcc	acc	tcg	ctg	gcc	gtg	ttc	tgc	1835	
Ala	Ser	Ser	Trp	Lys	Thr	Gly	Leu	Ala	Thr	Ser	Leu	Ala	Val	Phe	Cys		
495					500					505					510		
cac	gag	ttg	cca	cac	gag	ctg	ggg	gac	ttc	gcc	gcc	ttg	ctg	cac	gcg	1883	
His	Glu	Leu	Pro	His	Glu	Leu	Gly	Asp	Phe	Ala	Ala	Leu	Leu	His	Ala		
				515					520					525			
ggg	ctg	tcc	gtg	cgc	caa	gca	ctg	ctg	ctg	aac	ctg	gcc	tcc	gcg	ctc	1931	
Gly	Leu	Ser	Val	Arg	Gln	Ala	Leu	Leu	Leu	Asn	Leu	Ala	Ser	Ala	Leu		
			530					535					540				
acg	gcc	ttc	gct	ggc	ctc	tac	gtg	gca	ctc	gcg	gtt	gga	gtc	agc	gag	1979	
Thr	Ala	Phe	Ala	Gly	Leu	Tyr	Val	Ala	Leu	Ala	Val	Gly	Val	Ser	Glu		
			545				550					555					
gag	agc	gag	gcc	tgg	atc	ctg	gca	gtg	gcc	acc	ggc	ctg	ttc	ctc	tac	2027	
Glu	Ser	Glu	Ala	Trp	Ile	Leu	Ala	Val	Ala	Thr	Gly	Leu	Phe	Leu	Tyr		
			560			565					570						
gta	gca	ctc	tgc	gac	atg	ctc	ccg	gcg	atg	ttg	aaa	gta	cgg	gac	ccg	2075	
Val	Ala	Leu	Cys	Asp	Met	Leu	Pro	Ala	Met	Leu	Lys	Val	Arg	Asp	Pro		
575					580					585					590		
cgg	ccc	tgg	ctc	ctc	ttc	ctg	ctg	cac	aac	gtg	ggc	ctg	ctg	ggc	ggc	2123	
Arg	Pro	Trp	Leu	Leu	Phe	Leu	Leu	His	Asn	Val	Gly	Leu	Leu	Gly	Gly		
				595					600					605			
ttg	acc	gtc	ctg	ctg	ctg	ctg	tcc	ctg	tac	gag	gat	gac	atc	acc	ttc	2171	
Trp	Thr	Val	Leu	Leu	Leu	Leu	Ser	Leu	Tyr	Glu	Asp	Asp	Ile	Thr	Phe		
			610					615					620				
tga	tacc	ctgccctagt	ccccacctt	tgacttaaga	tcccacacct	cacaaaccta										2228	
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ccgcgggctg ggacc atg ggc tgc ttc ttc tcc aag aga cgg aag gct gac	171
Met Gly Cys Phe Phe Ser Lys Arg Arg Lys Ala Asp	
1 5 10	
aag gag tcg cgg ccc gag aac gag gag gag cgg cca aag cag tac agc	219
Lys Glu Ser Arg Pro Glu Asn Glu Glu Glu Arg Pro Lys Gln Tyr Ser	
15 20 25	
tgg gat cag cgc gag aag gtt gat cca aaa gac tac atg ttc agt gga	267
Trp Asp Gln Arg Glu Lys Val Asp Pro Lys Asp Tyr Met Phe Ser Gly	
30 35 40	
ctg aag gat gaa aca gta ggt cgc tta cct ggg acg gta gca gga caa	315
Leu Lys Asp Glu Thr Val Gly Arg Leu Pro Gly Thr Val Ala Gly Gln	
45 50 55 60	
cag ttt ctc att caa gac tgt gag aac tgt aac atc tat att ttt gat	363
Gln Phe Leu Ile Gln Asp Cys Glu Asn Cys Asn Ile Tyr Ile Phe Asp	
65 70 75	
cac tct gct aca gtt acc att gat gac tgt act aac tgc ata att ttt	411
His Ser Ala Thr Val Thr Ile Asp Asp Cys Thr Asn Cys Ile Ile Phe	
80 85 90	
ctg gga ccc gtg aaa ggc agc gtg ttt ttc cgg aat tgc aga gat tgc	459
Leu Gly Pro Val Lys Gly Ser Val Phe Phe Arg Asn Cys Arg Asp Cys	
95 100 105	
aag tgc aca tta gcc tgc caa caa ttt cgt gtg cga gat tgt aga aag	507
Lys Cys Thr Leu Ala Cys Gln Gln Phe Arg Val Arg Asp Cys Arg Lys	
110 115 120	
ctg gaa gtc ttt ttg tgt tgt gcc act caa ccc atc att gag tct tcc	555
Leu Glu Val Phe Leu Cys Cys Ala Thr Gln Pro Ile Ile Glu Ser Ser	
125 130 135 140	
tca aat atc aaa ttt gga tgt ttt caa tgg tac tat cct gaa tta gct	603
Ser Asn Ile Lys Phe Gly Cys Phe Gln Trp Tyr Tyr Pro Glu Leu Ala	
145 150 155	
ttc cag ttc aaa gat gca ggg cta agt atc ttc gac aat aca tgg agt	651
Phe Gln Phe Lys Asp Ala Gly Leu Ser Ile Phe Asp Asn Thr Trp Ser	
160 165 170	
aac att cat gac ttt aca cct gtg tca gga gaa ctc aac tgg agc ctt	699
Asn Ile His Asp Phe Thr Pro Val Ser Gly Glu Leu Asn Trp Ser Leu	
175 180 185	
ctt cca gaa gat gct gtg gtt cag gac tat gtt cct ata cct act acc	747
Leu Pro Glu Asp Ala Val Gln Asp Tyr Val Pro Ile Pro Thr Thr	
190 195 200	
gaa gag ctc aaa gct gtt cgt gtt tcc aca gaa gcc aat aga agc att	795
Glu Glu Leu Lys Ala Val Arg Val Ser Thr Glu Ala Asn Arg Ser Ile	

205	210	215	220	
gtt cca ata tcc cgg ggt cag aga cag aag agc agc gat gaa tca tgc				843
Val Pro Ile Ser Arg Gly Gln Arg Gln Lys Ser Ser Asp Glu Ser Cys	225	230	235	
tta gtg gta tta ttt gct ggt gat tac act att gca aat gcc aga aaa				891
Leu Val Val Leu Phe Ala Gly Asp Tyr Thr Ile Ala Asn Ala Arg Lys	240	245	250	
cta att gat gag atg gtt ggt aaa ggc ttt ttc cta gtt cag aca aag				939
Leu Ile Asp Glu Met Val Gly Lys Gly Phe Phe Leu Val Gln Thr Lys	255	260	265	
gaa gtg tcc atg aaa gct gag gat gct caa agg gtt ttt cgg gaa aaa				987
Glu Val Ser Met Lys Ala Glu Asp Ala Gln Arg Val Phe Arg Glu Lys	270	275	280	
gca cct gac ttc ctt cct ctt ctg aac aaa ggt cct gtt att gcc ttg				1035
Ala Pro Asp Phe Leu Pro Leu Leu Asn Lys Gly Pro Val Ile Ala Leu	285	290	295	300
gag ttt aat ggg gat ggt gct gta gaa gta tgt caa ctt att gta aac				1083
Glu Phe Asn Gly Asp Gly Ala Val Glu Val Cys Gln Leu Ile Val Asn	305	310	315	
gag ata ttc aat ggg acc aag atg ttt gta tct gaa agc aag gag aca				1131
Glu Ile Phe Asn Gly Thr Lys Met Phe Val Ser Glu Ser Lys Glu Thr	320	325	330	
ggt ttc tgg aga tgt aga cac gct cta aca ctt ggc tga tatacagatg				1180
Gly Phe Trp Arg Cys Arg His Ala Leu Thr Leu Gly *	335	340	345	
ggaatatgaa gtgcaatgtg gaaccggac ttggtataag acctttccca ctt				1233

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cctttttagtag tcctgatgaa taatttcatt ttctcaagt ttatgacact cggaacgtca	180
agaactggag gtttgtgcaa tttgagaccg gtcggcactg tgcagagatc agagtactaa	240

gagacagaga ttaaa atg gct tcc aga gga aag aca gag aca agc aaa tta	291
Met Ala Ser Arg Gly Lys Thr Glu Thr Ser Lys Leu	
1 5 10	
aag cag aat tta gaa gaa cag ttg gat aga ctc atg caa caa tta caa	339
Lys Gln Asn Leu Glu Glu Gln Leu Asp Arg Leu Met Gln Gln Leu Gln	
15 20 25	
gat ctg gag gaa tgc aga gag gaa ctt gat aca gat gaa tat gaa gaa	387
Asp Leu Glu Glu Cys Arg Glu Glu Leu Asp Thr Asp Glu Tyr Glu Glu	
30 35 40	
acc aaa aag gaa act ctg gag caa cta agt gaa ttt aat gat tca cta	435
Thr Lys Lys Glu Thr Leu Glu Gln Leu Ser Glu Phe Asn Asp Ser Leu	
45 50 55 60	
aag aaa att atg tct gga aat atg act ttg gta gat gaa cta agt gga	483
Lys Lys Ile Met Ser Gly Asn Met Thr Leu Val Asp Glu Leu Ser Gly	
65 70 75	
atg cag ctg gct att cag gca gct atc agc cag gcc ttt aaa acc cca	531
Met Gln Leu Ala Ile Gln Ala Ala Ile Ser Gln Ala Phe Lys Thr Pro	
80 85 90	
gag gtc atc aga ttg ttt gca aag aaa caa cca ggt cag ctt cgg aca	579
Glu Val Ile Arg Leu Phe Ala Lys Lys Gln Pro Gly Gln Leu Arg Thr	
95 100 105	
agg tta gca gag atg gat aga gat ctg atg gta gga aag ctg gaa aga	627
Arg Leu Ala Glu Met Asp Arg Asp Leu Met Val Gly Lys Leu Glu Arg	
110 115 120	
gac ctg tac act caa cag aaa gtg gag ata cta aca gct ctt agg aaa	675
Asp Leu Tyr Thr Gln Gln Lys Val Glu Ile Leu Thr Ala Leu Arg Lys	
125 130 135 140	
ctt gga gag aag ctg act gca gat gat gag gcc ttc ttg tca gca aat	723
Leu Gly Glu Lys Leu Thr Ala Asp Asp Glu Ala Phe Leu Ser Ala Asn	
145 150 155	
gca ggt gct ata ctc agc cag ttt gag aaa gtc tct aca gac ctt gga	771
Ala Gly Ala Ile Leu Ser Gln Phe Glu Lys Val Ser Thr Asp Leu Gly	
160 165 170	
cgg ccc cca agt tac atg aac tac ctg cta gac tca cac ccc agc aaa	819
Arg Pro Pro Ser Tyr Met Asn Tyr Leu Leu Asp Ser His Pro Ser Lys	
175 180 185	
aat att gat gtc ccc agc aag att agc ttc ctg tta aag atc cag gac	867
Asn Ile Asp Val Pro Ser Lys Ile Ser Phe Leu Leu Lys Ile Gln Asp	
190 195 200	
ctg tga atacatgcgt aactgcaaga atggaagcaa aggatgaacc caagttaaag	923
Leu *	
205	
cccagcaciaa gaatatgatg taagcgcttt tgggaaatgc agagattttc ttttctcttc	983

aaataataaa ttacatctaa aaattaaaaa aaaaaaaa

1021

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Glu Gly Thr Glu Gln Thr Leu Asp Ala Glu Glu Glu Gln Glu Glu Ser
20 25 30

gaa gaa gcg gcc tgt ggc agc aag aag cgg gta gtg cca ggt att gtg 144
Glu Glu Ala Ala Cys Gly Ser Lys Lys Arg Val Val Pro Gly Ile Val
35 40 45

tac ctg ggc cat atc ccg ccg cgc ttc cgg ccc ctg cac gtc cgc aac 192
Tyr Leu Gly His Ile Pro Pro Arg Phe Arg Pro Leu His Val Arg Asn
50 55 60

ctt ctc agc gcc tat ggc gag gtc gga cgc gtc ttc ttt cag gct gag 240
Leu Leu Ser Ala Tyr Gly Glu Val Gly Arg Val Phe Phe Gln Ala Glu
65 70 75 80

gac cgg ttc gtg aga cgc aag aag aag gca gca gca gct gcc gga gga 288
Asp Arg Phe Val Arg Arg Lys Lys Lys Ala Ala Ala Ala Ala Gly Gly
85 90 95

aaa aag cgg tcc tac acc aag gac tac acc gag gga tgg gtg gag ttc 336
Lys Lys Arg Ser Tyr Thr Lys Asp Tyr Thr Glu Gly Trp Val Glu Phe
100 105 110

cgt gac aag cgc ata gcc aag cgc gtg gcg gcc agt cta cac aac acg 384
Arg Asp Lys Arg Ile Ala Lys Arg Val Ala Ala Ser Leu His Asn Thr
115 120 125

cct atg ggt gcc cgc agg cgc agc ccc ttc cgt tat gat ctt tgg aac 432
Pro Met Gly Ala Arg Arg Arg Ser Pro Phe Arg Tyr Asp Leu Trp Asn
130 135 140

ctc aag tac ttg cac cgt ttc acc tgg tcc cac ctc agc gag cac ctc 480
Leu Lys Tyr Leu His Arg Phe Thr Trp Ser His Leu Ser Glu His Leu
145 150 155 160

gcc ttt gag cgc cag gtg cgc agg cag cgc ttg aga gcg gag gtt gct 528

Ala Phe Glu Arg Gln Val Arg Arg Gln Arg Leu Arg Ala Glu Val Ala	
165 170 175	
caa gcc aag cgt gag acc gac ttc tat ctt caa agt gtg gaa cgg gga	576
Gln Ala Lys Arg Glu Thr Asp Phe Tyr Leu Gln Ser Val Glu Arg Gly	
180 185 190	
caa cgc ttt ctt gcg gcc gat ggg gac cct gct cgc cca gat ggc tcc	624
Gln Arg Phe Leu Ala Ala Asp Gly Asp Pro Ala Arg Pro Asp Gly Ser	
195 200 205	
tgg aca ttt gcc cag cgt cct act gag cag gaa ctg agg gcc cgt aaa	672
Trp Thr Phe Ala Gln Arg Pro Thr Glu Gln Glu Leu Arg Ala Arg Lys	
210 215 220	
gca gca cgg cca ggg gga cgt gaa cgg gct cgc ctg gca act gcc cag	720
Ala Ala Arg Pro Gly Gly Arg Glu Arg Ala Arg Leu Ala Thr Ala Gln	
225 230 235 240	
gac aag gcc cgc tcc aac aaa ggg ctc ctg gcc agg atc ttt gga gcc	768
Asp Lys Ala Arg Ser Asn Lys Gly Leu Leu Ala Arg Ile Phe Gly Ala	
245 250 255	
ccg cca ccc tca gag agc atg gag gga cct tcc ctt gtc agg gac tcc	816
Pro Pro Pro Ser Glu Ser Met Glu Gly Pro Ser Leu Val Arg Asp Ser	
260 265 270	
tga gggc ctgggtggcc ccttccatctt cctggccctg ctctgcttcc tgtctacctc	873
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atactagaat gatcgtgact acccgggcag acatttttact gtgtttctca gaccaagtgt	933
ctactgatgg cccaacatg gagttttgtg ggcttccact gtccccactc cgaactcctg	993
tatgtgcctg gctgagtcac ctaattcata ctgtcatact agcataatta tgactattgc	1053
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cttcctgccc ccagaaaggg cctttatttc caactaggag gataatgcct agtccaggca	1173
atctttctct gtttagcagt cacagggtgag ggtggtatta gcatcttttt tatgtagaaa	1233
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aaaataaaaa tatttttatg tgccttttta tttttgttgg tggggagggtc attggacaag	1353
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tattagccca gtttatcaat cagttatctt aagtcagcat tttctaagcc attgtttgag	1533
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<220>
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 <222> (228)..(911)

<400> 157

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cctccgccag cggccaggca ccagccagac gacgccagcg accccggcct ctcggcggca      180
ccgcgctaac tcaggggctg cataggcacc cagagccgaa ctccaag  atg gga ggc      236
                                     Met Gly Gly
                                     1

aag ctc agc aag aag aag aag ggc tac aat gtg aac gac gag aaa gcc      284
Lys Leu Ser Lys Lys Lys Lys Gly Tyr Asn Val Asn Asp Glu Lys Ala
      5                      10                      15

aag gag aaa gac aag aag gcc gag ggc gcg gcg acg gaa gag gag ggg      332
Lys Glu Lys Asp Lys Lys Ala Glu Gly Ala Ala Thr Glu Glu Glu Gly
      20                      25                      30                      35

acc ccg aag gag agt gag ccc cag gcg gcc gca gag ccc gcc gag gcc      380
Thr Pro Lys Glu Ser Glu Pro Gln Ala Ala Ala Glu Pro Ala Glu Ala
                      40                      45                      50

aag gag ggc aag gag aag ccc gac cag gac gcc gag ggc aag gcc gag      428
Lys Glu Gly Lys Glu Lys Pro Asp Gln Asp Ala Glu Gly Lys Ala Glu
                      55                      60                      65

gag aag gag ggc gag aag gac gcg gcg gct gcc aag gag gag gcc ccg      476
Glu Lys Glu Gly Glu Lys Asp Ala Ala Ala Ala Lys Glu Glu Ala Pro
      70                      75                      80

aag gcg gag ccc gag aag acg gag ggc gcg gca gag gcc aag gct gag      524
Lys Ala Glu Pro Glu Lys Thr Glu Gly Ala Ala Glu Ala Lys Ala Glu
      85                      90                      95

ccc ccg aag gcg ccc gag cag gag cag gcg gcc ccc ggc ccc gct gcg      572
Pro Pro Lys Ala Pro Glu Gln Glu Gln Ala Ala Pro Gly Pro Ala Ala
      100                      105                      110                      115

ggc ggc gag gcc ccc aaa gct gct gag gcc gcc gcg gcc ccg gcc gag      620
Gly Gly Glu Ala Pro Lys Ala Ala Glu Ala Ala Ala Ala Pro Ala Glu
                      120                      125                      130

agc gcg gcc cct gcc gcc ggg gag gag ccc agc aag gag gaa ggg gaa      668
Ser Ala Ala Pro Ala Ala Gly Glu Glu Pro Ser Lys Glu Glu Gly Glu
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<400> 158

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aaggatcctt aattaaatta atcccccccc ccccccccgg cgaggggggag gcgggaccgc      60
cgaggagtcg cgccgaggac ggaggccacg atacctgcgt ggctggggct gcgggctccg      120
gggtcaccac cctgggcgac ccggaggtgg cgcctccgcc ggccgcagct ggagaggagc      180
gtgtcccaaa gccgggggag caggacttga gcaggcacgc ggggtcaccg ccgggcagcg      240
tggaggagcc atctcctgga ggagaaaact cacctggtgg cggaggctcc ccttgtttgt      300
cctcccgag cctggcgtgg ggttcttctg cggaagaga gagtgcgcgc ggagatagca      360

gtgtggaac gcgcgaggag tcggagggca cgggcggcca gcgctcagcc tgcgcc      416
atg ggt ggt ccc ggg acc aag agc ggg gag cct ttg tgt cct ccg tta      464
Met Gly Gly Pro Gly Thr Lys Ser Gly Glu Pro Leu Cys Pro Pro Leu
  1             5             10             15

ctg tgt aat cag gac aaa gaa acc ttg act ctg ctc att cag gtg cct      512
Leu Cys Asn Gln Asp Lys Glu Thr Leu Thr Leu Leu Ile Gln Val Pro
             20             25             30

cgg atc cag ccg caa agt ctt caa gga gat ttg aat ccc ctc tgg tac      560
Arg Ile Gln Pro Gln Ser Leu Gln Gly Asp Leu Asn Pro Leu Trp Tyr
             35             40             45

aaa tta cgc ttc tcc gca caa gac tta gtt tat tcc ttc ttt ttg caa      608
Lys Leu Arg Phe Ser Ala Gln Asp Leu Val Tyr Ser Phe Phe Leu Gln
             50             55             60

ttt gct cca gag aat aaa ttg agt acc aca gaa cct gtg att agc att      656
Phe Ala Pro Glu Asn Lys Leu Ser Thr Thr Glu Pro Val Ile Ser Ile
             65             70             75             80

tct tca aac aat gca gtg ata gaa ctg gca aaa tct cca gag agc cat      704
Ser Ser Asn Asn Ala Val Ile Glu Leu Ala Lys Ser Pro Glu Ser His
             85             90             95

gga cat tgg aga gag tgg tat tat ggt gta aac aac gat tct ttg gag      752
Gly His Trp Arg Glu Trp Tyr Tyr Gly Val Asn Asn Asp Ser Leu Glu
             100             105             110

gaa agg tta ttt gtc aat gaa gaa aat gtt aat gag ttt ctt gaa gag      800
Glu Arg Leu Phe Val Asn Glu Glu Asn Val Asn Glu Phe Leu Glu Glu
             115             120             125

gtc ctg agc tct cca ttc aaa cag tct atg tcc ttg acc cca cca tta      848
Val Leu Ser Ser Pro Phe Lys Gln Ser Met Ser Leu Thr Pro Pro Leu
             130             135             140

att gaa gtt ctt caa gtt act gat aat aag att caa att aat gca aag      896
Ile Glu Val Leu Gln Val Thr Asp Asn Lys Ile Gln Ile Asn Ala Lys
             145             150             155             160

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<221> CDS

<222> (417)..(1259)

<400> 159

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gggtcaccac cctgggcgac ccggaggtgg cgcctccgcc ggccgcagct ggagaggagc      180
gtgtcccaa gccgggggag caggacttga gcaggcacgc ggggtcaccg ccgggcagcg      240
tggaggagcc atctcctgga ggagaaaact cacctggtgg cggaggctcc ccttgtttgt      300
cctcccggag cctggcgtgg gggtcttctg cggaagaga gagtgcgcgc ggagatagca      360
gtgtggaaac gcgcgaggag tcggagggca cgggcggcca gcgctcagcc tgcgcc      416
atg ggt ggt ccc ggg acc aag agc ggg gag cct ttg tgt cct ccg tta      464
Met Gly Gly Pro Gly Thr Lys Ser Gly Glu Pro Leu Cys Pro Pro Leu
  1             5             10             15

ctg tgt aat cag gac aaa gaa acc ttg act ctg ctc att cag gtg cct      512
Leu Cys Asn Gln Asp Lys Glu Thr Leu Thr Leu Leu Ile Gln Val Pro
             20             25             30

cgg atc cag ccg caa agt ctt caa gga gat ttg aat ccc ctc tgg tac      560
Arg Ile Gln Pro Gln Ser Leu Gln Gly Asp Leu Asn Pro Leu Trp Tyr
             35             40             45

aaa tta cgc ttc tcc gca caa gac tta gtt tat tcc ttc ttt ttg caa      608
Lys Leu Arg Phe Ser Ala Gln Asp Leu Val Tyr Ser Phe Phe Leu Gln
             50             55             60

ttt gct cca gag aat aaa ttg agt acc aca gaa cct gtg att agc att      656
Phe Ala Pro Glu Asn Lys Leu Ser Thr Thr Glu Pro Val Ile Ser Ile
             65             70             75             80

tct tca aac aat gca gtg ata gaa ctg gca aaa tct cca gag agc cat      704
Ser Ser Asn Asn Ala Val Ile Glu Leu Ala Lys Ser Pro Glu Ser His
             85             90             95

gga cat tgg aga gag tgg tat tat ggt gta aac aac gat tct ttg gag      752
Gly His Trp Arg Glu Trp Tyr Tyr Gly Val Asn Asn Asp Ser Leu Glu
             100             105             110

ttg caa gaa tgt agt aac tct gat cag cta caa gga aag gag gaa aga      800
Leu Gln Glu Cys Ser Asn Ser Asp Gln Leu Gln Gly Lys Glu Glu Arg
             115             120             125

gta aat gaa gaa agt cat cta act gaa aag gaa tat ata gaa cat tgt      848
Val Asn Glu Glu Ser His Leu Thr Glu Lys Glu Tyr Ile Glu His Cys
             130             135             140

aac acc cct aca act gat tct gat tca tct ata gca gtt aaa gca cta      896
Asn Thr Pro Thr Thr Asp Ser Asp Ser Ser Ile Ala Val Lys Ala Leu
             145             150             155             160
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caa ata gat agc ttt ggt tta gtt aca tgc ttt caa caa gag tct ctt	944
Gln Ile Asp Ser Phe Gly Leu Val Thr Cys Phe Gln Gln Glu Ser Leu	
165 170 175	
gat gtt tct caa atg ata ctt gga aaa tct cag caa cct gag tca aaa	992
Asp Val Ser Gln Met Ile Leu Gly Lys Ser Gln Gln Pro Glu Ser Lys	
180 185 190	
atg caa tct gaa ttt ata aaa gaa aaa agt gct act tgt tca aat gag	1040
Met Gln Ser Glu Phe Ile Lys Glu Lys Ser Ala Thr Cys Ser Asn Glu	
195 200 205	
gaa aaa ggt aac tta aac gag tca gta ata act gaa gag aaa gaa aca	1088
Glu Lys Gly Asn Leu Asn Glu Ser Val Ile Thr Glu Glu Lys Glu Thr	
210 215 220	
gat gga gat cac cta tct tca tta ctg aac aaa act acg gtt cac aat	1136
Asp Gly Asp His Leu Ser Ser Leu Leu Asn Lys Thr Thr Val His Asn	
225 230 235 240	
ata cct gga ttc gac agc ata aaa gaa acc aat atg cag gat ggt agt	1184
Ile Pro Gly Phe Asp Ser Ile Lys Glu Thr Asn Met Gln Asp Gly Ser	
245 250 255	
gtg cag gtc att aaa gat cat gtg acc aat tgt gca ttc agt ttt cag	1232
Val Gln Val Ile Lys Asp His Val Thr Asn Cys Ala Phe Ser Phe Gln	
260 265 270	
aat tct ttg cta tat gat ttg gat taa ttcta tataattttg gacttttaaa	1284
Asn Ser Leu Leu Tyr Asp Leu Asp *	
275 280	
tattaagggtt aaaaaatacc tgtatctaaa attgattctg ttaactgttg tcttaaaaact	1344
aaagggtatta aagtataaaa ttaaaatttg caa	1377

<210> 160
 <211> 1611
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> CDS
 <222> (510) .. (1112)

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tcgagcccgagc agcgagagtg accagcatgg tccctgccgg cagctcgggg ccggagggtt	120
ttgactgcaa ggccagccca cgccgagggt ccaagcatcg ggatatgccg ccagcacctg	180
gctgctgcag caccgcgctg gacatgagcg ctccgccccaa cccgacggcg tcagctggcg	240

cgcgcgccccg cgaccgacgt gcgcaggcgcc ccacggggccg cgcagccgcc attgctctcc	300
tgccacggag gggagcgctt ggtggcagtc cgcgggccccg gacggaaggc tgaggcgacg	360
cctcgacgac agcggaccgg agctgcaggg gcaacacatt cagggcgggg tgccccattt	420
aggcctggct gaccggagta agaaactaca acccccgaag tgccttgccg ctcaaggtta	480
cggaggcagt gaccacccac cctggagcc atg gtc cac gcc ttc ctc att cac	533
Met Val His Ala Phe Leu Ile His	
1 5	
acc ttg agg gcc ccg aat act gag gac acg ggc ctt tgc cga gtg ctg	581
Thr Leu Arg Ala Pro Asn Thr Glu Asp Thr Gly Leu Cys Arg Val Leu	
10 15 20	
tac tcc tgc gtc ttc ggt gct gag aag tca cct gat gac cca cgg ccg	629
Tyr Ser Cys Val Phe Gly Ala Glu Lys Ser Pro Asp Asp Pro Arg Pro	
25 30 35 40	
cat ggt gcc gag agg gac agg ctt ctc cgg aag gaa cag att tta gct	677
His Gly Ala Glu Arg Asp Arg Leu Leu Arg Lys Glu Gln Ile Leu Ala	
45 50 55	
gtg gcc agg cag gta gag tca atg tgt cgg ctg cag cag cag gca tct	725
Val Ala Arg Gln Val Glu Ser Met Cys Arg Leu Gln Gln Gln Ala Ser	
60 65 70	
ggc cgg ccc ccc atg gac ctg cag ccg caa tcc tca gat gag caa gtg	773
Gly Arg Pro Pro Met Asp Leu Gln Pro Gln Ser Ser Asp Glu Gln Val	
75 80 85	
ccg ctg cac gag gcc cca cgt ggg gct ttc cgc ctg gca gca gag aac	821
Pro Leu His Glu Ala Pro Arg Gly Ala Phe Arg Leu Ala Ala Glu Asn	
90 95 100	
cct ttc cag gag cca cgg acg gtg gtg tgg ctg ggc gtg ctc tcg tta	869
Pro Phe Gln Glu Pro Arg Thr Val Val Trp Leu Gly Val Leu Ser Leu	
105 110 115 120	
ggc ttt gcc ctg gtg ctg gat gcc cat gag aac ctg cta ctg gct gag	917
Gly Phe Ala Leu Val Leu Asp Ala His Glu Asn Leu Leu Leu Ala Glu	
125 130 135	
ggc acg ctc cgg ctg ctg aca cgc ctc ctc ctt gac cac ctc cgg ctg	965
Gly Thr Leu Arg Leu Leu Thr Arg Leu Leu Leu Asp His Leu Arg Leu	
140 145 150	
ctg gcg ccc agc acc agc ctt ctg ctg cgg gct gac cgc att gag ggc	1013
Leu Ala Pro Ser Thr Ser Leu Leu Leu Arg Ala Asp Arg Ile Glu Gly	
155 160 165	
atc ctc acc cgc ttc ctg cca cat ggt cag ctg ctt ttc ctc aac gac	1061
Ile Leu Thr Arg Phe Leu Pro His Gly Gln Leu Leu Phe Leu Asn Asp	
170 175 180	
cag ttt gtc caa ggc ctg gag aag gaa ttc agt gcc gct tgg ccc cgc	1109

Gln Phe Val Gln Gly Leu Glu Lys Glu Phe Ser Ala Ala Trp Pro Arg
 185 190 195 200

tga ttcc tcgttgggat ggtgcttctg agggcaggca gagggtagac acacagccag 1166
 *

atgaagcttg gcattccct cctaccacgc agctctgatg tgctgctata ccaggacaag 1226

tgggtgacac aagcctgcag aaagggggct gggcagaggg tggaggaggt cctgcctgtc 1286

ctcaggtttag tggaaccaca gaacttcctg agcctagagc tgctgtgtta cttagaccgc 1346

tgccgtgagg cagccacgct tgtccttgaa cccaccttcc tccatccctg ccagccgata 1406

gtgctaggggt gaggagctgc ctggagctca ccccgctctt cttccaaacc cacagccacc 1466

atgcctggcc tcaatctttt cttttaaaca attattccta tattttattg taatgcagtt 1526

aaccgtgttt gtcagattca atactctgtg acccgtaac caagtctctg tatgtttatt 1586

actgcaattc aagtggccct gtatt 1611

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 <213> Homo sapiens

<220>
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 <222> (193)..(555)

<400> 161

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tacgtaagct tggatcctct agagcggccg cctactacta ctaaattcgc ggccgcgtcg 120

accgccgccc agtcgcgcgg aggcggaggc ttgggtgctg tcaagattca gcttcacccc 180

taaccacccg cc atg gcc gag gaa ggc att gct gct gga ggt gta atg 228
 Met Ala Glu Glu Gly Ile Ala Ala Gly Gly Val Met
 1 5 10

gac gtt aat act gct tta caa gag gtt ctg aag act gcc ctc atc cac 276
 Asp Val Asn Thr Ala Leu Gln Glu Val Leu Lys Thr Ala Leu Ile His
 15 20 25

gat ggc cta gca cgt gga att cgc gaa gct gcc aaa gcc tta gac aag 324
 Asp Gly Leu Ala Arg Gly Ile Arg Glu Ala Ala Lys Ala Leu Asp Lys
 30 35 40

cgc caa gcc cat ctt tgt gtg ctt gca tcc aac tgt gat gag cct atg 372
 Arg Gln Ala His Leu Cys Val Leu Ala Ser Asn Cys Asp Glu Pro Met
 45 50 55 60

tat gtc aag ttg gtg gag gcc ctt tgt gct gaa cac caa atc aac cta	420
Tyr Val Lys Leu Val Glu Ala Leu Cys Ala Glu His Gln Ile Asn Leu	
65 70 75	
att aag gtt gat gac aac aag aaa cta gga gaa tgg gta ggc ctt tgt	468
Ile Lys Val Asp Asp Asn Lys Lys Leu Gly Glu Trp Val Gly Leu Cys	
80 85 90	
aaa att gac aga gag ggg tgt att gcg gcc gct cta gag gat cca agc	516
Lys Ile Asp Arg Glu Gly Cys Ile Ala Ala Ala Leu Glu Asp Pro Ser	
95 100 105	
tta cgt acg cgt gca tgc gac gtc ata gct ctt cta tag tgtcacctaa	565
Leu Arg Thr Arg Ala Cys Asp Val Ile Ala Leu Leu *	
110 115 120	
att	568

<210> 162
 <211> 1837
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> CDS
 <222> (784) .. (1473)

<400> 162	
attctagaac acattatcac ctttttaaata aagcaaaatg atgatcccag gttaaaaaaac	60
cttggtaaaa actggttctt aagaacccca agttcgccaa aagaagggtc aagctaataa	120
aggaaacttc tggttaccaa ttccatctgc ctctttctca gtgactcctg acgagctgct	180
catttacaca cacctgctcc cccccccacc ccacagtctg gattgcgaaa cctaccgcac	240
cccaccccca gtgcaggaag aaggtagacc tgggtctgggg tggggacaga gagtctggga	300
gggggtgggtg gctggcagtc tcgggtggctg gcgacgcctc ttccgctctt ccttcctggg	360
aggaggcggg caaggcgaag cctctccgct cagtcgatgg tttccttcag gacgtctcat	420
agaggtgtgg gtgagatccc aggtctgggc cgcaatttct agccacgctg cccaaccttc	480
aggcaagcag tcaggttcca cagctacccc accacactct cagagtcgag gggaacaaga	540
agagggagtg gtctgtaaat gcgtcgggac aagagtgcc tcctaactcc acctggagct	600
ggcgtcaggg cgatctctgg atgccagcc cataagcctg gcctgtctgt gaggaggctg	660
cgtctggctc ccgctctcac agccattgca gtacattgag ctccatagag acagcgccgg	720
ggcaagtgag agccggacgg gcaactgggcg actctgtgcc tcgctgagga aaaataacta	780


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ttt ttt ttt tct tgt cta taa ag catttaaccc cctgttaca caactcactc 1505
Phe Phe Phe Ser Cys Leu *
225 230

cttttaaaga aaaaaattga aatgtaaggc tgtgtaagat ttgttttttaa actgtacagt 1565

gtctttttttt gtatagttaa cacactaccg aatgtgtcctt tagatagccc tgtcctgggtg 1625

gtatttttcaa tagccactaa ccttgcctgg tacagtatgg gggttgtaaa ttggcatgga 1685

aatttaaagc aggttcttgt tgggtgcacag cacaaattag ttatatatgg ggatggtagt 1745

tttttcatct tcagttgtct ctgatgcagc ttatacgaaa taattgttgt tctgttaact 1805

gaataccact ctgtaattgc aaaaaaaaaa aa 1837

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<210> 163
<211> 1454
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (269)..(718)

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<400> 163
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caaccgggtac cccgcccacg ccagcagcca cgggtcgcca gcgccacgca gcggaggcgg 120

gcggcatggc tggcccaagg tgcgcaggcg cactagccct ggggggtgctt ccgtgtctgc 180

gccctgagac atttttggcg ccggccccag cctgagcggg gacggcggcc gggagggcgc 240

ggccccgggtt cccgttcccc gcggagcc atg cgg tac aac gag aag gag ctg 292
Met Arg Tyr Asn Glu Lys Glu Leu
1 5

cag gct ctg tcc cgg cag ccg gcc gag atg gcg gcc gag ctg ggc atg 340
Gln Ala Leu Ser Arg Gln Pro Ala Glu Met Ala Ala Glu Leu Gly Met
10 15 20

agg ggc ccc aag aag ggc agc gtg ctg aag cgg cgg ctg gtg aag ctg 388
Arg Gly Pro Lys Lys Gly Ser Val Leu Lys Arg Arg Leu Val Lys Leu
25 30 35 40

gtg gtg aat ttc ctc ttc tac ttt cgg aca gac gag gcc gag ccc gtc 436
Val Val Asn Phe Leu Phe Tyr Phe Arg Thr Asp Glu Ala Glu Pro Val
45 50 55

gga gcc ctg ctg ctg gag cgc tgc aga gtc gtc cgg gaa gag ccc ggc 484
Gly Ala Leu Leu Leu Glu Arg Cys Arg Val Val Arg Glu Glu Pro Gly
60 65 70

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acc ttc tcc atc agc ttc att gag gac cct gag agg aag tat cac ttt      532
Thr Phe Ser Ile Ser Phe Ile Glu Asp Pro Glu Arg Lys Tyr His Phe
      75                      80                      85

gag tgc agc agc gag gag cag tgt cag gag tgg atg gag gct ctg cgt      580
Glu Cys Ser Ser Glu Glu Gln Cys Gln Glu Trp Met Glu Ala Leu Arg
      90                      95                      100

cgg gcc agc tac gag ttc atg cgg aga agc ctc atc ttc tac agg aac      628
Arg Ala Ser Tyr Glu Phe Met Arg Arg Ser Leu Ile Phe Tyr Arg Asn
    105                      110                      115                      120

gaa atc cgg aag gtg acg ggc aag gac ccc ctg gaa cag ttc ggc ata      676
Glu Ile Arg Lys Val Thr Gly Lys Asp Pro Leu Glu Gln Phe Gly Ile
      125                      130                      135

tcc gag gag gcc agg ttc cag ctg agt ggc ttg cag gcg tga gcgcagg      725
Ser Glu Glu Ala Arg Phe Gln Leu Ser Gly Leu Gln Ala *
      140                      145                      150

gcacggtggt cagcgtgcag cgggacggga ctggccctgc ccagccatga atcgcttggc      785

catgcctgga tctgttttgt tttggttttt ggtttttggg tcagggtttc actgtgttgc      845

ccaggctaga gtgcagtggg gccacagctc actgtgacct tgaccttctg gactcaagtg      905

atcctcctgc ctcagcttcc caagtagcgg ggatcacagg catgagccgc cacacccggc      965

catcacacct ggattttcag tgggagggtt ttggtttgga gacatccaaa gcctgaagcc     1025

aggtgggtgt gggcaggggc tgcattttat gaaactgccc agcaagctgc gctccctggg     1085

gccccaggat ccacctaact ggcctggcac ctggtgccac gtgctgctgc cgccaggata     1145

tgcgcccttc cacaggtgcc ctgcctgagt tgtgtgcatc caggggcctg gtgagcccc     1205

aggctggtgg catggcccc ctgccccgtg ctgaatgaat gtacagagcc agacaaagct     1265

gtgaatggcc taggggctga gtccacacc agctgtgaat tctcctgcag acaggagggc     1325

cctggctgtg cacctgggga agtggttgcc ctggggccag ggtgcttggt ctgttcaa     1385

aaaggtacct cttttccaaa aaaaaaata aaaatgtatt tttatttcgg gggccggagg     1445

cttattctt                                     1454

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<210> 164
<211> 1162
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (9)..(917)

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Met Ala Ala Ala Ala Ala Glu Thr Pro Glu Val Leu Arg Glu
1 5 10

tgc ggt tgc aag ggc atc cgg acc tgt ctg atc tgc gag cgg cag cgc 98
Cys Gly Cys Lys Gly Ile Arg Thr Cys Leu Ile Cys Glu Arg Gln Arg
15 20 25 30

ggc agt gac ccg ccc tgg gag ctg ccc cca gcg aaa aca tac cgt ttc 146
Gly Ser Asp Pro Pro Trp Glu Leu Pro Pro Ala Lys Thr Tyr Arg Phe
35 40 45

att tac tgc tcc gac acc ggc tgg gcc gtg ggc aca gag gag tct gac 194
Ile Tyr Cys Ser Asp Thr Gly Trp Ala Val Gly Thr Glu Glu Ser Asp
50 55 60

ttt gag ggc tgg gcc ttc ccc ttc cca gga gtg atg ctg atc gag gac 242
Phe Glu Gly Trp Ala Phe Pro Phe Pro Gly Val Met Leu Ile Glu Asp
65 70 75

ttt gtg acc cgg gag gaa gaa gcc gag ttg gtg cgg ctc atg gac cgt 290
Phe Val Thr Arg Glu Glu Glu Ala Glu Leu Val Arg Leu Met Asp Arg
80 85 90

gac ccc tgg aag ctc tcc cag tct gga cgg agg aag cag gac tat ggc 338
Asp Pro Trp Lys Leu Ser Gln Ser Gly Arg Arg Lys Lys Asp Tyr Gly
95 100 105 110

ccc aaa gtc aac ttt cgg aaa cag aag cta aag acc gag ggc ttc tgc 386
Pro Lys Val Asn Phe Arg Lys Gln Lys Leu Lys Thr Glu Gly Phe Cys
115 120 125

ggc ctc ccc agc ttc agc cgg gag gtg gtg cgg agg atg ggc ctc tac 434
Gly Leu Pro Ser Phe Ser Arg Glu Val Val Arg Arg Met Gly Leu Tyr
130 135 140

ccg ggg ctg gag ggc ttc cgg ccc gtc gag cag tgc aac ctg gac tac 482
Pro Gly Leu Glu Gly Phe Arg Pro Val Glu Gln Cys Asn Leu Asp Tyr
145 150 155

tgc ccc gag cgg ggc tct gcc att gac ccc cac ctg gac gac gcc tgg 530
Cys Pro Glu Arg Gly Ser Ala Ile Asp Pro His Leu Asp Asp Ala Trp
160 165 170

ctg tgg ggg gag cgg ctg gtc agc ctc aac ctc ctg tcc ccc acc gtg 578
Leu Trp Gly Glu Arg Leu Val Ser Leu Asn Leu Leu Ser Pro Thr Val
175 180 185 190

ctg tcc atg tgt cgg gag gcg ccc ggg agc ctg ctc ctc tgc tgc gcc 626
Leu Ser Met Cys Arg Glu Ala Pro Gly Ser Leu Leu Leu Cys Ser Ala
195 200 205

ccg tgc gct gcc ccg gag gcc ttg gtg gac agc gtg ata gca ccc agc 674
Pro Ser Ala Ala Pro Glu Ala Leu Val Asp Ser Val Ile Ala Pro Ser
210 215 220

cgg tcg gtg cta tgc cag gag gtg gag gtg gcc atc ccc tta ccc gcc 722
 Arg Ser Val Leu Cys Gln Glu Val Glu Val Ala Ile Pro Leu Pro Ala
 225 230 235

 cgc tcc ctg ctg gtc ctc acc ggg gcg gca cgg cac cag tgg aag cat 770
 Arg Ser Leu Leu Val Leu Thr Gly Ala Ala Arg His Gln Trp Lys His
 240 245 250

 gcc atc cac cgc aga cac atc gag gcc cgc cgc gtc tgc gtc act ttc 818
 Ala Ile His Arg Arg His Ile Glu Ala Arg Arg Val Cys Val Thr Phe
 255 260 265 270

 cgg gag ctg tcg gct gag ttt ggc cct gga ggg agg cag caa gag ctg 866
 Arg Glu Leu Ser Ala Glu Phe Gly Pro Gly Gly Arg Gln Gln Glu Leu
 275 280 285

 ggc cag gaa ctg ctg cgg atc gcc ctc tcc ttc cag gga aga ccc gtg 914
 Gly Gln Glu Leu Leu Arg Ile Ala Leu Ser Phe Gln Gly Arg Pro Val
 290 295 300

 tga accg cctccttggc tccagacttg actgatcccg ggattgaaat gaggagcaca 971
 *

 gaacagggcc tcctgcaact cacgggggttt caagagaaga tggctgaccc ctgatgctgt 1031
 gagcagtgtg agccctgccc aggagcaggt tttgatggga acgtacctcc aggcagcccc 1091
 cttccacctg gaccgtggcc acactttttt ggttatttag tttgtcacag tcttggggac 1151
 atgggatcat t 1162

<210> 165
 <211> 1018
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (40)..(747)

<400> 165

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 Met Ala Ala Ala Asn
 1 5

ccg tgg gac ccg gcg tcc gcg cct aac ggc gct ggg cta gtg cta ggc 102
 Pro Trp Asp Pro Ala Ser Ala Pro Asn Gly Ala Gly Leu Val Leu Gly
 10 15 20

cac ttc ata gct tcg ggg atg gtc aat cag gag atg tta aac atg tct 150
 His Phe Ile Ala Ser Gly Met Val Asn Gln Glu Met Leu Asn Met Ser
 25 30 35

aag aaa aca gtt tct tgt ttt gtg aac ttc acc aga cta cag cag atc	198
Lys Lys Thr Val Ser Cys Phe Val Asn Phe Thr Arg Leu Gln Gln Ile	
40 45 50	
aca aat att caa gct gaa atc tac cag aaa aac ctg gaa att gaa ctc	246
Thr Asn Ile Gln Ala Glu Ile Tyr Gln Lys Asn Leu Glu Ile Glu Leu	
55 60 65	
ctg aaa cta gaa aaa gat aca gca gat gtt gtt cat cct ttc ttt ttg	294
Leu Lys Leu Glu Lys Asp Thr Ala Asp Val Val His Pro Phe Phe Leu	
70 75 80 85	
gct cag aag tgt cat act ctg caa agc atg aat aat cat ttg gaa gca	342
Ala Gln Lys Cys His Thr Leu Gln Ser Met Asn Asn His Leu Glu Ala	
90 95 100	
gtg ctg aaa gag aag aga tcc ctt agg caa aga ctg ttg aaa ccc atg	390
Val Leu Lys Glu Lys Arg Ser Leu Arg Gln Arg Leu Leu Lys Pro Met	
105 110 115	
tgc cag gaa aac tta cct att gaa gct gtt tat cac aga tat atg gta	438
Cys Gln Glu Asn Leu Pro Ile Glu Ala Val Tyr His Arg Tyr Met Val	
120 125 130	
cat ttg ctg gag ttg gct gtg act ttc att gag aga tta gaa acc cac	486
His Leu Leu Glu Leu Ala Val Thr Phe Ile Glu Arg Leu Glu Thr His	
135 140 145	
ctt gaa aca att aga aat att cct cat tta gct gca aat cta aag aaa	534
Leu Glu Thr Ile Arg Asn Ile Pro His Leu Ala Ala Asn Leu Lys Lys	
150 155 160 165	
atg aac cag gct tta gca aag atg gat ata ttg gtg act gag aca gaa	582
Met Asn Gln Ala Leu Ala Lys Met Asp Ile Leu Val Thr Glu Thr Glu	
170 175 180	
gaa ctg gca gag aat ata ctc aag tgg cgt aaa caa caa aac gaa gtt	630
Glu Leu Ala Glu Asn Ile Leu Lys Trp Arg Lys Gln Gln Asn Glu Val	
185 190 195	
tcg tct tgt atc ccc aaa ata tta gct gaa gaa agt tat ctt tat aaa	678
Ser Ser Cys Ile Pro Lys Ile Leu Ala Glu Glu Ser Tyr Leu Tyr Lys	
200 205 210	
cat gat att ata atg cct cct tta cct ttt act tct aaa gtt cat gtc	726
His Asp Ile Ile Met Pro Pro Leu Pro Phe Thr Ser Lys Val His Val	
215 220 225	
caa act att aat gcc aag tag tc atcaacttta tttttgctta attatgtgta	779
Gln Thr Ile Asn Ala Lys *	
230 235	
gtcatatgaa gtctatttct agttgactgt aacatgggta ttaatagtct ttgctgctgg	839
taatactgaa agaacctgct ttatattgga gtatcaagat ctcaggttca ttaagaccaa	899

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Met Ala Ala Ala Asn
1 5

ccg tgg gac ccg gcg tcc gcg cct aac ggc gct ggg cta gtg cta ggc 102
Pro Trp Asp Pro Ala Ser Ala Pro Asn Gly Ala Gly Leu Val Leu Gly
10 15 20

cac ttc ata gct tcg ggg atg gtc aat cag aaa aac ctg gaa att gaa 150
His Phe Ile Ala Ser Gly Met Val Asn Gln Lys Asn Leu Glu Ile Glu
25 30 35

ctc ctg aaa cta gaa aaa gat aca gca gat gtt gtt cat cct ttc ttt 198
Leu Leu Lys Leu Glu Lys Asp Thr Ala Asp Val Val His Pro Phe Phe
40 45 50

ttg gct cag aag tgt cat act ctg caa agc atg aat aat cat ttg gaa 246
Leu Ala Gln Lys Cys His Thr Leu Gln Ser Met Asn Asn His Leu Glu
55 60 65

gca gtg ctg aaa gag aag aga tcc ctt agg caa aga ctg ttg aaa ccc 294
Ala Val Leu Lys Glu Lys Arg Ser Leu Arg Gln Arg Leu Leu Lys Pro
70 75 80 85

atg tgc cag gaa aac tta cct att gaa gct gtt tat cac aga tat atg 342
Met Cys Gln Glu Asn Leu Pro Ile Glu Ala Val Tyr His Arg Tyr Met
90 95 100

gta cat ttg ctg gag ttg gct gtg act ttc att gag aga tta gaa acc 390
Val His Leu Leu Glu Leu Ala Val Thr Phe Ile Glu Arg Leu Glu Thr
105 110 115

cac ctt gaa aca att aga aat att cct cat tta gct gca aat cta aag 438
His Leu Glu Thr Ile Arg Asn Ile Pro His Leu Ala Ala Asn Leu Lys
120 125 130

aaa atg aac cag gct tta gca aag atg gat ata ttg gtg act gag aca 486
Lys Met Asn Gln Ala Leu Ala Lys Met Asp Ile Leu Val Thr Glu Thr
135 140 145

gaa gaa ctg gca gag aat ata ctc aag tgg cgt aaa caa caa aac gaa 534
 Glu Glu Leu Ala Glu Asn Ile Leu Lys Trp Arg Lys Gln Gln Asn Glu
 150 155 160 165

gtt tcg tct tgt atc ccc aaa ata tta gct gaa gaa agt tat ctt tat 582
 Val Ser Ser Cys Ile Pro Lys Ile Leu Ala Glu Glu Ser Tyr Leu Tyr
 170 175 180

aaa cat gat att ata atg cct cct tta cct ttt act tct aaa gtt cat 630
 Lys His Asp Ile Ile Met Pro Pro Leu Pro Phe Thr Ser Lys Val His
 185 190 195

gtc caa act att aat gcc aag tag tcatcaactt tatttttgct taattatgtg 684
 Val Gln Thr Ile Asn Ala Lys *
 200 205

tagtcatatg aagtctatatt ctagttgact gtaacatggg tattaatagt ctttgctgct 744

ggtaataactg aaagaacctg ctttatattg gagtatcaag atctcagggtt cattaagacc 804

aaactgactt ttcctttgtt tttcatatat ttttattcta ccttttcagta aaactagaga 864

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 ggggtggtga ggcccaggagc agctcttgtt cagcttctgg aatttctgag cagccctcgt 180
 cagtacaag atg gac ccc gta gtc ttg agt tac atg gac agt cta ctg 228
 Met Asp Pro Val Val Leu Ser Tyr Met Asp Ser Leu Leu
 1 5 10

cgg caa tca gat gtc tca cta ttg gat ccg cca agc tgg ctc aat gac 276
 Arg Gln Ser Asp Val Ser Leu Leu Asp Pro Pro Ser Trp Leu Asn Asp
 15 20 25

cat att att ggg ttt gcg ttt gag tac ttt gcc aac agt cag ttt cat 324
 His Ile Ile Gly Phe Ala Phe Glu Tyr Phe Ala Asn Ser Gln Phe His
 30 35 40 45

gac tgc tct gat cac gtc agt ttc atc agc cct gaa gtc acc cag ttc	372
Asp Cys Ser Asp His Val Ser Phe Ile Ser Pro Glu Val Thr Gln Phe	
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Ile Lys Cys Thr Ser Asn Pro Ala Glu Ile Ala Met Phe Leu Glu Pro	
65 70 75	
ctg gac ctc ccc aac aag aga gtt gta ttt tta gcc atc aat gat aac	468
Leu Asp Leu Pro Asn Lys Arg Val Val Phe Leu Ala Ile Asn Asp Asn	
80 85 90	
tcc aac cag gca gct gga gga acc cac tgg agt tta ttg gtc tac ctc	516
Ser Asn Gln Ala Ala Gly Gly Thr His Trp Ser Leu Leu Val Tyr Leu	
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caa gat aaa aat agc ttt ttt cat tat gat tcc cat agc agg agc aac	564
Gln Asp Lys Asn Ser Phe Phe His Tyr Asp Ser His Ser Arg Ser Asn	
110 115 120 125	
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Ser Val His Ala Lys Gln Val Ala Glu Lys Leu Glu Ala Phe Leu Gly	
130 135 140	
aga aaa gga gac aaa ctg gcc ttt gtg gaa gag aaa gcc cct gcc caa	660
Arg Lys Gly Asp Lys Leu Ala Phe Val Glu Glu Lys Ala Pro Ala Gln	
145 150 155	
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Gln Asn Ser Tyr Asp Cys Gly Met Tyr Val Ile Cys Asn Thr Glu Ala	
160 165 170	
ttg tgt cag aac ttc ttt agg caa cag aca gaa tca ctg ctg cag cta	756
Leu Cys Gln Asn Phe Phe Arg Gln Gln Thr Glu Ser Leu Leu Gln Leu	
175 180 185	
ctc acc cct gca tac atc aca aag aag agg gga gaa tgg aaa gat ctc	804
Leu Thr Pro Ala Tyr Ile Thr Lys Lys Arg Gly Glu Trp Lys Asp Leu	
190 195 200 205	
att gcc aca ctt gct aaa aag tag ctattgaagt atatttgcca cttttgaagg	858
Ile Ala Thr Leu Ala Lys Lys *	
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                                   Met Lys Pro Val Leu
                                   1          5

cag tcc ctc tac cac cga gtg ctg ctc tac ccc cca ccc cag cac cgg      161
Gln Ser Leu Tyr His Arg Val Leu Leu Tyr Pro Pro Pro Gln His Arg
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gtg gaa gcc atc aaa ata atg aaa gag ata ctt ggg agc cca cag cgt      209
Val Glu Ala Ile Lys Ile Met Lys Glu Ile Leu Gly Ser Pro Gln Arg
              25              30              35

ctc tgt gac ttg gca gga ccc agc tcc act gaa tca gag tcc aga aaa      257
Leu Cys Asp Leu Ala Gly Pro Ser Ser Thr Glu Ser Glu Ser Arg Lys
              40              45              50

aga tca att tca aaa aga aag tct cat ctg gat ctc ctc aaa ctc atc      305
Arg Ser Ile Ser Lys Arg Lys Ser His Leu Asp Leu Leu Lys Leu Ile
              55              60              65

atg gat ggc atg acc gaa gca tgc atc aag ggt ggc atc gaa gct tgc      353
Met Asp Gly Met Thr Glu Ala Cys Ile Lys Gly Gly Ile Glu Ala Cys
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tat gca gcc gtg tcc tgt gtc tgc acc ttg ctg ggt gcc ctg gat gag      401
Tyr Ala Ala Val Ser Cys Val Cys Thr Leu Leu Gly Ala Leu Asp Glu
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ctc agc cag ggg aag ggc ttg agc gaa ggt cag gtg caa ctg ctg ctt      449
Leu Ser Gln Gly Lys Gly Leu Ser Glu Gly Gln Val Gln Leu Leu Leu
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ctg cgc ctt gag gag ctg aag gat ggg gct gag tgg agc cga gat tcc      497
Leu Arg Leu Glu Glu Leu Lys Asp Gly Ala Glu Trp Ser Arg Asp Ser
              120              125              130

atg gag atc aat gag gct gac ttc cgc tgg cag cgg cga gtg ctg tcc      545
Met Glu Ile Asn Glu Ala Asp Phe Arg Trp Gln Arg Arg Val Leu Ser
              135              140              145

tca gaa cac acg ccg tgg gag tca ggg aac gag agg agc ctt gac atc      593
Ser Glu His Thr Pro Trp Glu Ser Gly Asn Glu Arg Ser Leu Asp Ile
              150              155              160              165

agc atc agt gtc acc aca gac aca ggc cag acc act ctc gag gga gag      641
Ser Ile Ser Val Thr Thr Asp Thr Gly Gln Thr Thr Leu Glu Gly Glu
              170              175              180

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Leu Gly Gln Thr Thr Pro Glu Asp His Ser Gly Asn His Lys Asn Ser	
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Leu Lys Ser Pro Ala Ile Pro Glu Gly Lys Glu Thr Leu Ser Lys Val	
200 205 210	
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Leu Glu Thr Glu Ala Val Asp Gln Pro Asp Val Val Gln Arg Ser His	
215 220 225	
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Thr Val Pro Tyr Pro Asp Ile Thr Asn Phe Leu Ser Val Asp Cys Arg	
230 235 240 245	
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Thr Arg Ser Tyr Gly Ser Arg Tyr Ser Glu Ser Asn Phe Ser Val Asp	
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Asp Gln Asp Leu Ser Arg Thr Glu Phe Asp Ser Cys Asp Gln Tyr Ser	
265 270 275	
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Met Ala Ala Glu Lys Asp Ser Gly Arg Ser Asp Val Ser Asp Ile Gly	
280 285 290	
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Ser Asp Asn Cys Ser Leu Ala Asp Glu Glu Gln Thr Pro Arg Asp Cys	
295 300 305	
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Leu Gly His Arg Ser Leu Arg Thr Ala Ala Leu Ser Leu Lys Leu Leu	
310 315 320 325	
aag aac cag gag gcg gat cag cac agc gcc agg ctg ttc ata cag tcc	1121
Lys Asn Gln Glu Ala Asp Gln His Ser Ala Arg Leu Phe Ile Gln Ser	
330 335 340	
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Leu Glu Gly Leu Leu Pro Arg Leu Leu Ala Leu Ser Asn Val Glu Glu	
345 350 355	
gtg gac acc gct ctg cag aac ttt gcc tct act ttc tgc tca ggc atg	1217
Val Asp Thr Ala Leu Gln Asn Phe Ala Ser Thr Phe Cys Ser Gly Met	
360 365 370	
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Met His Ser Pro Gly Phe Asp Gly Asn Ser Ser Leu Ser Phe Gln Met	
375 380 385	
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Leu Met Asn Ala Asp Ser Leu Tyr Thr Ala Ala His Cys Ala Leu Leu	
390 395 400 405	

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425 430 435	
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Gly Val Leu Met Val Phe Ser Gln Ala Trp Ile Glu Glu Leu Tyr His	
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Gln Val Leu Asp Arg Asn Met Leu Gly Glu Ala Gly Tyr Trp Gly Ser	
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Pro Glu Asp Asn Ser Leu Pro Leu Ile Thr Met Leu Thr Asp Ile Asp	
470 475 480 485	
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Ser Ala Leu Ala Gln Met Ala Ala Ala Ser Cys Val Gln Lys Lys Lys	
600 605 610	
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Glu Glu Arg Glu Ala Gln Glu Pro Ser Asp Ala Ile Thr Gln Val Lys	
615 620 625	
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Gly Leu Glu Met Gly Ser His Asn Pro Asp Cys Trp Pro His Val Phe	
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Arg Val Cys Glu Tyr Val Gly Thr Leu Glu His Asn His Phe Ser Asp	
680 685 690	
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Gly Ala Ser Gln Pro Pro Leu Thr Ile Ser Gln Pro Gln Lys Ala Thr	
695 700 705	
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Gly Ser Ala Gly Leu Leu Gly Asp Pro Glu Cys Glu Gly Ser Pro Pro	
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Glu His Ser Pro Glu Gln Gly Arg Ser Leu Ser Thr Ala Pro Val Val	
730 735 740	
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Gln Pro Leu Ser Ile Gln Asp Leu Val Arg Glu Gly Ser Arg Gly Arg	
745 750 755	
gcc tcc gac ttc cgc ggc ggg agc ctc atg agc ggg agc agc gcg gcc	2417
Ala Ser Asp Phe Arg Gly Gly Ser Leu Met Ser Gly Ser Ser Ala Ala	
760 765 770	
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Lys Val Val Leu Thr Leu Ser Thr Gln Ala Asp Arg Leu Phe Glu Asp	
775 780 785	
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Val Asp Tyr Ser Leu Ala Met Pro Gly Glu Val Lys Ser Thr Gln Asp	
825 830 835	
cga aaa agc gcc ctc cac ctg ttc cgc ctg ggg aat gcc atg ctg agg	2657
Arg Lys Ser Ala Leu His Leu Phe Arg Leu Gly Asn Ala Met Leu Arg	
840 845 850	
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Ile Val Arg Ser Lys Ala Arg Pro Leu Leu His Val Met Arg Cys Trp	

855				860				865								
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Ser	Leu	Val	Ala	Pro	His	Leu	Val	Glu	Ala	Ala	Cys	His	Lys	Glu	Arg	
870					875					880					885	
cat	gtg	tct	cag	aag	gct	gtt	tcc	ttc	atc	cat	gac	ata	ctg	aca	gaa	2801
His	Val	Ser	Gln	Lys	Ala	Val	Ser	Phe	Ile	His	Asp	Ile	Leu	Thr	Glu	
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Val	Leu	Thr	Asp	Trp	Asn	Glu	Pro	Pro	His	Phe	His	Phe	Asn	Glu	Ala	
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ctc	ttc	cga	cct	ttc	gag	cgc	att	atg	cag	ctg	gaa	ttg	tgt	gat	gag	2897
Leu	Phe	Arg	Pro	Phe	Glu	Arg	Ile	Met	Gln	Leu	Glu	Leu	Cys	Asp	Glu	
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gac	gtc	caa	gac	cag	gtt	gtc	aca	tcc	att	ggt	gag	ctg	gtt	gaa	gtg	2945
Asp	Val	Gln	Asp	Gln	Val	Val	Thr	Ser	Ile	Gly	Glu	Leu	Val	Glu	Val	
	935					940					945					
tgt	tcc	acg	cag	atc	cag	tcg	gga	tgg	aga	ccc	ttg	ttc	agt	gcc	ctg	2993
Cys	Ser	Thr	Gln	Ile	Gln	Ser	Gly	Trp	Arg	Pro	Leu	Phe	Ser	Ala	Leu	
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Gly	Asp	Tyr	Ser	Met	Gly	Lys	Gly	Gln	Ala	Pro	Val	Phe	Asp	Val	Phe	
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gaa	gct	ttt	ctc	aat	act	gac	aac	atc	cag	gtc	ttt	gct	aat	gca	gcc	3137
Glu	Ala	Phe	Leu	Asn	Thr	Asp	Asn	Ile	Gln	Val	Phe	Ala	Asn	Ala	Ala	
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Thr	Ser	Tyr	Ile	Met	Cys	Leu	Met	Lys	Phe	Ala	Lys	Gly	Leu	Gly	Glu	
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Val	Asp	Cys	Lys	Glu	Ile	Gly	Asp	Cys	Ala	Pro	Ala	Pro	Gly	Ala	Pro	
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Ser	Thr	Asp	Leu	Cys	Leu	Pro	Ala	Leu	Asp	Tyr	Leu	Arg	Arg	Cys	Ser	
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Gln	Leu	Leu	Ala	Lys	Ile	Tyr	Lys	Met	Pro	Leu	Lys	Pro	Ile	Phe	Leu	
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Ser Ser Glu Asp Gly Ile Glu Ser Val Leu Ser Asp Phe Asp Asp Asp	
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Thr Gly Leu Ile Glu Val Trp Ile Ile Leu Leu Glu Gln Leu Thr Ala	
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Ala Val Ser Asn Cys Pro Arg Gln His Gln Pro Pro Thr Leu Asp Leu	
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Leu Phe Glu Leu Leu Arg Asp Val Thr Lys Thr Pro Gly Pro Gly Phe	
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Gly Ile Tyr Ala Val Val His Leu Leu Leu Pro Val Met Ser Val Trp	
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ctc cgc cgg agc cat aaa gac cat tcc tac tgg gat atg gcc tct gcc	3665
Leu Arg Arg Ser His Lys Asp His Ser Tyr Trp Asp Met Ala Ser Ala	
1175 1180 1185	
aat ttc aag cac gct att ggt ctg tcc tgt gag ctg gtg gtg gag cac	3713
Asn Phe Lys His Ala Ile Gly Leu Ser Cys Glu Leu Val Val Glu His	
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Ile Gln Ser Phe Leu His Ser Asp Ile Arg Tyr Glu Ser Met Ile Asn	
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acc atg ctg aag gac ctg ttt gag ttg ctg gtc gcc tgt gtg gcc aag	3809
Thr Met Leu Lys Asp Leu Phe Glu Leu Leu Val Ala Cys Val Ala Lys	
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Leu Val Thr Ala Gly Pro Val Phe Thr Glu Glu Met Trp Arg Leu Ala	
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Cys Cys Ala Leu Gln Asp Ala Phe Ser Ala Thr Leu Lys Pro Val Lys	
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Asp Leu Leu Gly Cys Phe His Ser Gly Thr Glu Ser Phe Ser Gly Glu	
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Gly Cys Gln Val Arg Val Ala Ala Pro Ser Ser Ser Pro Ser Ala Glu	
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gaa gcc aag ctg gct ggc ttc ctc aga tac atc tct atg cag aac ttg Glu Ala Lys Leu Ala Gly Phe Leu Arg Tyr Ile Ser Met Gln Asn Leu 1415 1420 1425	4385
gca gtc ata ttc gac ctg ctg ctg gac tct tat agg act gcc agg gag Ala Val Ile Phe Asp Leu Leu Leu Asp Ser Tyr Arg Thr Ala Arg Glu 1430 1435 1440 1445	4433
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atc acg gcc gag caa gtg aag aag gtc ctt ttt gag gac gac gag aga Ile Thr Ala Glu Gln Val Lys Lys Val Leu Phe Glu Asp Asp Glu Arg 1495 1500 1505	4625
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Trp Arg Ala Arg Met Pro Leu Leu Ser Val Gln Pro Val Ser Asn Ala	
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Asp Trp Val Trp Leu Val Lys Arg Leu His Lys Leu Cys Met Glu Leu	
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tgc aac aac tac atc cag atg cac ttg gac ctg gag aac tgt atg gag	4865
Cys Asn Asn Tyr Ile Gln Met His Leu Asp Leu Glu Asn Cys Met Glu	
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Glu Pro Pro Ile Phe Lys Gly Asp Pro Phe Phe Ile Leu Pro Ser Phe	
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Gln Ser Glu Ser Ser Thr Pro Ser Thr Gly Gly Phe Ser Gly Lys Glu	
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Thr Pro Ser Glu Asp Asp Arg Ser Gln Ser Arg Glu His Met Gly Glu	
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Ser Leu Ser Leu Lys Ala Gly Gly Gly Asp Leu Leu Leu Pro Pro Ser	
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Pro Lys Val Glu Lys Lys Asp Pro Ser Arg Lys Lys Glu Trp Trp Glu	
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Asn Ala Gly Asn Lys Ile Tyr Thr Met Ala Ala Asp Lys Thr Ile Ser	
1670 1675 1680 1685	
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Lys Leu Met Thr Glu Tyr Lys Lys Arg Lys Gln Gln His Asn Leu Ser	
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gcg ttc ccc aaa gag gtc aaa gtg gag aag aaa gga gag cca ctg ggt	5249
Ala Phe Pro Lys Glu Val Lys Val Glu Lys Lys Gly Glu Pro Leu Gly	
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ccc agg ggc cag gac tcc ccg ctg ctt cag cgt ccc cag cac ttg atg	5297
Pro Arg Gly Gln Asp Ser Pro Leu Leu Gln Arg Pro Gln His Leu Met	
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Asp Gln Gly Gln Met Arg His Ser Phe Ser Ala Gly Pro Glu Leu Leu	
1735 1740 1745	
cga cag gac aag agg ccc cgc tca ggc tcc acc ggg agc tcc ctc agt	5393
Arg Gln Asp Lys Arg Pro Arg Ser Gly Ser Thr Gly Ser Ser Leu Ser	
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gtc tcg gtg aga gac gca gaa gca cag atc cag gca tgg acc aac atg	5441
Val Ser Val Arg Asp Ala Glu Ala Gln Ile Gln Ala Trp Thr Asn Met	

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Val Leu Thr Val Leu Asn Gln Ile Gln Ile Leu Pro Asp Gln Thr Phe			
1785	1790	1795	
acg gcc ctc cag ccc gca gtg ttc ccg tgc atc agt cag ctg acc tgt			5537
Thr Ala Leu Gln Pro Ala Val Phe Pro Cys Ile Ser Gln Leu Thr Cys			
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cac gtg acc gac atc aga gtt cgc cag gct gtg agg gag tgg ctg ggc			5585
His Val Thr Asp Ile Arg Val Arg Gln Ala Val Arg Glu Trp Leu Gly			
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agg gtg ggc cgt gtc tat gac atc att gtg tag ccgactcc tgtttctactc			5636
Arg Val Gly Arg Val Tyr Asp Ile Ile Val *			
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 aatagtatta aaagtcagag gctttactaa tctacctata tgtattccat ggctaacaaa 240
 ccctggcccc ttacat atg agc tct gga ggt tcg cct ggc tgc ctc agg 290
 Met Ser Ser Gly Gly Ser Pro Gly Cys Leu Arg
 1 5 10
 ctt gca gaa ggc tgc ccc aat cac aga gcc tgg gta agg tgg aac agg 338
 Leu Ala Glu Gly Cys Pro Asn His Arg Ala Trp Val Arg Trp Asn Arg
 15 20 25

agg cag ccc cac tcg gct ttt ctg att gca tcc cac ctg ttt ctg agt Arg Gln Pro His Ser Ala Phe Leu Ile Ala Ser His Leu Phe Leu Ser 30 35 40	386
gtg ttg gtt tgg ttt aat tct ttt caa ggg ttg gag ttg gaa agt gaa Val Leu Val Trp Phe Asn Ser Phe Gln Gly Leu Glu Leu Glu Ser Glu 45 50 55	434
aac cct aga cac ttg ctg tgg aat gtt tgc ctg gtt gta ttg gtg tgt Asn Pro Arg His Leu Leu Trp Asn Val Cys Leu Val Val Leu Val Cys 60 65 70 75	482
ccc tct tct tca ctg gca tgt cgc ttt caa gtg tac caa agg aca ttt Pro Ser Ser Ser Leu Ala Cys Arg Phe Gln Val Tyr Gln Arg Thr Phe 80 85 90	530
tgt tct gtt gaa agc cac agg acc aaa agg aaa ata ttg caa cta ttt Cys Ser Val Glu Ser His Arg Thr Lys Arg Lys Ile Leu Gln Leu Phe 95 100 105	578
gca aac ata ctt ccc tac cta tac aag cag cca tat act aaa aag cac Ala Asn Ile Leu Pro Tyr Leu Tyr Lys Gln Pro Tyr Thr Lys Lys His 110 115 120	626
taa acaa gcacaaatga acactaaata gccttataacc aaaaagcatt cttgtaactg *	683
tcagggcatg gtatgaattc cttcctcttt aagcagcaac ttaccacagg cttggtggct	743
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 cctgtaatat tgacaatata gaaccaagta gcaataaaga tgatgatttt cttgaaaaaa 240
 atggagctga tgaaaaatta gagcaaattt cagagtaaag actcattgga tgagaaaaat 300

tgg cca act cta gct gct gct tct tgc act gct tcc ggc ggg gtg agg	314
Trp Pro Thr Leu Ala Ala Ala Ser Cys Thr Ala Ser Gly Gly Val Arg	
45 50 55	

acc cac agc tct gat gtg ggc gct tca ggc cat ggt gga gct gag att	362
Thr His Ser Ser Asp Val Gly Ala Ser Gly His Gly Gly Ala Glu Ile	
60 65 70	

cag gtt ggc ttt tcc cct cag ctc cca gct ggc tgg tga acccatcatc	411
Gln Val Gly Phe Ser Pro Gln Leu Pro Ala Gly Trp *	
75 80 85	

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ctgggctatg tgtgccttga gctggattga cagggtgttt ccatagtga gactccctca	831
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Met Ser Thr Ser Leu Gln Glu Gly Gln Glu Asp Gly Pro Ala Gly Trp	
15 20 25	

aga gcg aat ctg aag ccc gtg gac agg aga agc cca gct gag agg act	146
Arg Ala Asn Leu Lys Pro Val Asp Arg Arg Ser Pro Ala Glu Arg Thr	
30 35 40	

ctg aag ccc aag gaa cca cgg gcc ctg gca gag ccg agg gcg ggg gag	194
Leu Lys Pro Lys Glu Pro Arg Ala Leu Ala Glu Pro Arg Ala Gly Glu	
45 50 55 60	

gcc ccc agg aag gtc tca ggc agc ttt gct ggg agt gtc cac atc acc	242
Ala Pro Arg Lys Val Ser Gly Ser Phe Ala Gly Ser Val His Ile Thr	
65 70 75	
ctg acc ccc gtg agg cct gac agg acc cca cgc cca gcc agc cca gga	290
Leu Thr Pro Val Arg Pro Asp Arg Thr Pro Arg Pro Ala Ser Pro Gly	
80 85 90	
ccc agc ctc cca gcc agg tcc ccc tcc cca ccc cgc cgc agg aga ctg	338
Pro Ser Leu Pro Ala Arg Ser Pro Ser Pro Pro Arg Arg Arg Leu	
95 100 105	
gcc gtc cct gcc agc ctc gac gtt tgt gac aac tgg ctt cgg ccg gag	386
Ala Val Pro Ala Ser Leu Asp Val Cys Asp Asn Trp Leu Arg Pro Glu	
110 115 120	
ccc cct ggc cag gaa gcc cga gtg cag agc tgg aag gag gag gag aag	434
Pro Pro Gly Gln Glu Ala Arg Val Gln Ser Trp Lys Glu Glu Glu Lys	
125 130 135 140	
aaa cct cac ctt cag ggc aaa cca ggg aga ccc ttg tcc ccg gcc aat	482
Lys Pro His Leu Gln Gly Lys Pro Gly Arg Pro Leu Ser Pro Ala Asn	
145 150 155	
gtc cct gct ctg cct ggc gag acg gtg acc tcc cca gtc agg ctg cac	530
Val Pro Ala Leu Pro Gly Glu Thr Val Thr Ser Pro Val Arg Leu His	
160 165 170	
ccc gac tac ctc tcc ccg gag gag ata cag agg cag ctg cag gac atc	578
Pro Asp Tyr Leu Ser Pro Glu Glu Ile Gln Arg Gln Leu Gln Asp Ile	
175 180 185	
gag agg cgg ctg gac gcc ctg gag ctc cgc ggc gtg gag ctg gag aag	626
Glu Arg Arg Leu Asp Ala Leu Glu Leu Arg Gly Val Glu Leu Glu Lys	
190 195 200	
cga ctg cgg gcg gcc gag gga gat gac gct gag gat agc ctc atg gtg	674
Arg Leu Arg Ala Ala Glu Gly Asp Asp Ala Glu Asp Ser Leu Met Val	
205 210 215 220	
gac tgg ttc tgg ctc att cac gag aag cag ctt ctg ctg aga cag gag	722
Asp Trp Phe Trp Leu Ile His Glu Lys Gln Leu Leu Leu Arg Gln Glu	
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Ser Glu Leu Met Tyr Lys Ser Lys Ala Gln Arg Leu Glu Glu Gln Gln	
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Leu Asp Ile Glu Gly Glu Leu Arg Arg Leu Met Ala Lys Pro Glu Ala	
255 260 265	
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Leu Lys Ser Leu Gln Glu Arg Arg Glu Gln Glu Leu Leu Glu Gln	
270 275 280	

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Gln Ser Arg Val Leu Ser Leu Leu Val Leu His Trp Trp Ala Ala Cys	
65 70 75	
gct ccc gcg tcc aca gct ctg ttt cgc ctt ccg gtc ccc gta gct ctg	409
Ala Pro Ala Ser Thr Ala Leu Phe Arg Leu Pro Val Pro Val Ala Leu	
80 85 90	
cag ggg aac ggg atc tct gcc gcc tcc tcg gcc gct aag cga ccc ggg	457
Gln Gly Asn Gly Ile Ser Ala Ala Ser Ser Ala Ala Lys Arg Pro Gly	
95 100 105	
gct gcc cga cct agc gag tgc gca cga ccg ccc agc gag ggg tag ccg	505
Ala Ala Arg Pro Ser Glu Cys Ala Arg Pro Pro Ser Glu Gly *	
110 115 120	
agtcgaggca gcacgggtcc caaggcagcc aaggctgcgc c	546

<210> 174
 <211> 1009
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (50)..(793)

<400> 174

gcacgagggc acgagctgta tgagtggtag cctttcccct caaccagca	atg gag	55
	Met Glu	
	1	
gag cag ccc cag atg caa gac gcc gac gag ccc gcg gac tcc gga ggg	103	
Glu Gln Pro Gln Met Gln Asp Ala Asp Glu Pro Ala Asp Ser Gly Gly		
5 10 15		
gaa ggc cgg gca ggc ggg cca ccg cag gtc gcc ggc gcc cag gcg gcg	151	
Glu Gly Arg Ala Gly Gly Pro Pro Gln Val Ala Gly Ala Gln Ala Ala		
20 25 30		
tgc agc gag gac cgc atg acc ctg ctc ctc agg ctg aga gca cag aca	199	
Cys Ser Glu Asp Arg Met Thr Leu Leu Leu Arg Leu Arg Ala Gln Thr		
35 40 45 50		
aaa caa caa ctc tta gaa tat aaa tca atg gtt gat gca agt gaa gaa	247	
Lys Gln Gln Leu Leu Glu Tyr Lys Ser Met Val Asp Ala Ser Glu Glu		
55 60 65		
aaa act cca gaa caa att atg caa gaa aag caa atc gaa gct aaa att	295	
Lys Thr Pro Glu Gln Ile Met Gln Glu Lys Gln Ile Glu Ala Lys Ile		
70 75 80		
gaa gac ctg gaa aat gaa att gaa gag gta aaa gtt gct ttt gag ata	343	
Glu Asp Leu Glu Asn Glu Ile Glu Glu Val Lys Val Ala Phe Glu Ile		

85	90	95	
aaa aag ctt gca tta gac agg atg aga ctt tca act gca ctt aaa aaa			391
Lys Lys Leu Ala Leu Asp Arg Met Arg Leu Ser Thr Ala Leu Lys Lys			
100	105	110	
aac ctg gag aaa att agc aga cag tct agt gtg ctc atg gat aac atg			439
Asn Leu Glu Lys Ile Ser Arg Gln Ser Ser Val Leu Met Asp Asn Met			
115	120	125	130
aaa cac cta tta gag cta aat aaa tta ata atg aaa tca cag cag gaa			487
Lys His Leu Leu Glu Leu Asn Lys Leu Ile Met Lys Ser Gln Gln Glu			
135	140	145	
tct tgg gat tta gag gaa aaa ctg ctt gat att aga aag aag aga ttg			535
Ser Trp Asp Leu Glu Glu Lys Leu Leu Asp Ile Arg Lys Lys Arg Leu			
150	155	160	
caa tta aaa caa gct tca gaa agt aag ctt tta gaa ata cag act gaa			583
Gln Leu Lys Gln Ala Ser Glu Ser Lys Leu Leu Glu Ile Gln Thr Glu			
165	170	175	
aag aac aaa cag aag att gat ttg gac agt atg gaa aac tca gag agg			631
Lys Asn Lys Gln Lys Ile Asp Leu Asp Ser Met Glu Asn Ser Glu Arg			
180	185	190	
ata aag atc ata cga caa aac cta cag atg gag ata aaa att act act			679
Ile Lys Ile Ile Arg Gln Asn Leu Gln Met Glu Ile Lys Ile Thr Thr			
195	200	205	210
gtt att caa cat gtg ttc cag aac ctt att ttg ggg agt aaa gtc aat			727
Val Ile Gln His Val Phe Gln Asn Leu Ile Leu Gly Ser Lys Val Asn			
215	220	225	
tgg gca gag gat cct gcc ctt aag gaa att gtt ctg cag ctt gag aag			775
Trp Ala Glu Asp Pro Ala Leu Lys Glu Ile Val Leu Gln Leu Glu Lys			
230	235	240	
aat gtt gac atg atg taa taagaa ttcatttctg acatatttta catttctggc			829
Asn Val Asp Met Met *			
245			
aatctcaact cttatttggga atacttctgt gcatttgtct gtccaccgta attttagaaa			889
agcatatcca taacgtttac agttgtagta cagttgtggt tagttatttg tagtgggatt			949
gaaagtaatt tttttctttt tatatttcta tattcagggtt ggttttttgg tgccgttcgc			1009

<210> 175
 <211> 834
 <212> DNA
 <213> Homo sapiens
 <220>

<221> CDS
 <222> (12)..(833)

<400> 175

tttcgtcaag g atg aca tcc att cga gct gta ttt ata ttc ctg tgg ctg	50
Met Thr Ser Ile Arg Ala Val Phe Ile Phe Leu Trp Leu	
1 5 10	
cag ctg gac ttg gtg aat gga gag aat gtg gag cag cat cct tca acc	98
Gln Leu Asp Leu Val Asn Gly Glu Asn Val Glu Gln His Pro Ser Thr	
15 20 25	
ctg agt gtc cag gag gga gac agc gct gtt atc aag tgt act tat tca	146
Leu Ser Val Gln Glu Gly Asp Ser Ala Val Ile Lys Cys Thr Tyr Ser	
30 35 40 45	
gac agt gcc tca aac tac ttc cct tgg tat aag caa gaa ctt gga aaa	194
Asp Ser Ala Ser Asn Tyr Phe Pro Trp Tyr Lys Gln Glu Leu Gly Lys	
50 55 60	
aga cct cag ctt att ata gac att cgt tca aat gtg ggc gaa aag aaa	242
Arg Pro Gln Leu Ile Ile Asp Ile Arg Ser Asn Val Gly Glu Lys Lys	
65 70 75	
gac caa cga att gct gtt aca ttg aac aag aca gcc aaa cat ttc tcc	290
Asp Gln Arg Ile Ala Val Thr Leu Asn Lys Thr Ala Lys His Phe Ser	
80 85 90	
ctg cac atc aca gag acc caa cct gaa gac tgc gct gtc tac ttc tgt	338
Leu His Ile Thr Glu Thr Gln Pro Glu Asp Ser Ala Val Tyr Phe Cys	
95 100 105	
gca gca agt aac ggc cag gca gga act gct ctg atc ttt ggg aag gga	386
Ala Ala Ser Asn Gly Gln Ala Gly Thr Ala Leu Ile Phe Gly Lys Gly	
110 115 120 125	
acc acc tta tca gtg agt tcc aat atc cag aac cct gac cct gcc gtg	434
Thr Thr Leu Ser Val Ser Ser Asn Ile Gln Asn Pro Asp Pro Ala Val	
130 135 140	
tac cag ctg aga gac tct aaa tcc agt gac aag tct gtc tgc cta ttc	482
Tyr Gln Leu Arg Asp Ser Lys Ser Ser Asp Lys Ser Val Cys Leu Phe	
145 150 155	
acc gat ttt gat tct caa aca aat gtg tca caa agt aag gat tct gat	530
Thr Asp Phe Asp Ser Gln Thr Asn Val Ser Gln Ser Lys Asp Ser Asp	
160 165 170	
gtg tat atc aca gac aaa act gtg cta gac atg agg tct atg gac ttc	578
Val Tyr Ile Thr Asp Lys Thr Val Leu Asp Met Arg Ser Met Asp Phe	
175 180 185	
aag agc aac agt gct gtg gcc tgg agc aac aaa tct gac ttt gca tgt	626
Lys Ser Asn Ser Ala Val Ala Trp Ser Asn Lys Ser Asp Phe Ala Cys	
190 195 200 205	
gca aac gcc ttc aac aac agc att att cca gaa gac acc ttc ttc ccc	674

Ala Asn Ala Phe Asn Asn Ser Ile Ile Pro Glu Asp Thr Phe Phe Pro	
210 215 220	
agc cca gaa agt tcc tgt gat gtc aag ctg gtc gag aaa agc ttt gaa	722
Ser Pro Glu Ser Ser Cys Asp Val Lys Leu Val Glu Lys Ser Phe Glu	
225 230 235	
aca gat acg aac cta aac ttt caa aac ctg tca gtg att ggg ttc cga	770
Thr Asp Thr Asn Leu Asn Phe Gln Asn Leu Ser Val Ile Gly Phe Arg	
240 245 250	
atc ctc ctc ctg aaa gtg gcc ggg ttt aat ctg ctc atg acg ctg cgg	818
Ile Leu Leu Leu Lys Val Ala Gly Phe Asn Leu Leu Met Thr Leu Arg	
255 260 265	
ctg tgg tcc agc tga g	834
Leu Trp Ser Ser *	
270	

<210> 176
 <211> 778
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (34)..(576)
 <220>
 <221> misc_feature
 <222> (1)...(778)
 <223> n = a,t,c or g

<400> 176	
tttcgtagac ctctctgtct tgtagcatct gcc atg aga atc agg ctc ctg tgc	54
Met Arg Ile Arg Leu Leu Cys	
1 5	
tgt gtg gcc ttt tct ctc ctg tgg gca ggt cca gtg att gct ggg atc	102
Cys Val Ala Phe Ser Leu Leu Trp Ala Gly Pro Val Ile Ala Gly Ile	
10 15 20	
acc cag gca cca aca tct cag atc ctg gca gca gga cgg cgc atg aca	150
Thr Gln Ala Pro Thr Ser Gln Ile Leu Ala Ala Gly Arg Arg Met Thr	
25 30 35	
ctg aga tgt acc cag gat atg aga cat aat gcc atg tac tgg tat aga	198
Leu Arg Cys Thr Gln Asp Met Arg His Asn Ala Met Tyr Trp Tyr Arg	
40 45 50 55	
caa gat cta gga ctg ggg cta agg ctc atc cat tat tca aat act gca	246
Gln Asp Leu Gly Leu Gly Leu Arg Leu Ile His Tyr Ser Asn Thr Ala	
60 65 70	

ggt acc act ggc aaa gga gaa gtc cct gat ggt tat agt gtc tcc aga	294
Gly Thr Thr Gly Lys Gly Glu Val Pro Asp Gly Tyr Ser Val Ser Arg	
75 80 85	
gca aac aca gat gat ttc ccc ctc acg ttg gcg tct gct gta ccc tct	342
Ala Asn Thr Asp Asp Phe Pro Leu Thr Leu Ala Ser Ala Val Pro Ser	
90 95 100	
cag aca tct gtg tac ttc tgt gcc agc agt gac ggg gct agc ggg agt	390
Gln Thr Ser Val Tyr Phe Cys Ala Ser Ser Asp Gly Ala Ser Gly Ser	
105 110 115	
ccc cac acc ggg gag ctg ttt ttt gga gaa ggc tct agg ctg acc gta	438
Pro His Thr Gly Glu Leu Phe Phe Gly Glu Gly Ser Arg Leu Thr Val	
120 125 130 135	
ctg gag gac ctg aaa aac gtg ttc cca ccc gag gtc gct gtg ttt gag	486
Leu Glu Asp Leu Lys Asn Val Phe Pro Pro Glu Val Ala Val Phe Glu	
140 145 150	
cca tca gaa gca gag atc tcc cac acc caa aag gcc aca ctg gtg tgc	534
Pro Ser Glu Ala Glu Ile Ser His Thr Gln Lys Ala Thr Leu Val Cys	
155 160 165	
ctg gcc aca ggc ttc tac ccc gac cac gtg gag ctg agc tga ttttttc	583
Leu Ala Thr Gly Phe Tyr Pro Asp His Val Glu Leu Ser *	
170 175 180	
atagactatg agcttctaaa aaatcatccc catattcgtc attacattct tgggatcaaa	643
tatactgcat gaaaaaagat gctcagaaaa gtctatgtta agttaatgta gaatatatga	703
atgagtgaag gaaagtgttt tgaaaccatc atagggaata taataagata anattacact	763
agaataaaat gaaac	778

<210> 177
 <211> 708
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (176)..(493)

<400> 177	
gagggcgggg gaggcagatg agtaaattgga tccttacact aagtgtgatg agcagaaacc	60
cagggcgtct ggggcatgag cagggatacc taaccagcc ctgggggctc aatctctccc	120
caccctgca ggagaggctt ggggtgagtt ttgggaataa ggaccatcca gccac atg	178
Met	
1	

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acg aag ggg aag gaa aat ccc cat caa ggc aaa aac aca gtc caa ggc      226
Thr Lys Gly Lys Glu Asn Pro His Gln Gly Lys Asn Thr Val Gln Gly
      5              10              15

tct gag gcc caa att ccg ggg aga ggg gtg aag gtt gtt tgt cgc acc      274
Ser Glu Ala Gln Ile Pro Gly Arg Gly Val Lys Val Val Cys Arg Thr
      20              25              30

tgg gtt aaa ggg tgg ggg tgg aga gta gga gaa gag gct aca cag gtg      322
Trp Val Lys Gly Trp Gly Trp Arg Val Gly Glu Glu Ala Thr Gln Val
      35              40              45

aga agg tgt cag atc aca aag ggc ctt gta tgc caa act aag aag act      370
Arg Arg Cys Gln Ile Thr Lys Gly Leu Val Cys Gln Thr Lys Lys Thr
      50              55              60              65

gaa ctt gac cat gaa gtt agg cag acc ctc tgg aga gtt tta aag caa      418
Glu Leu Asp His Glu Val Arg Gln Thr Leu Trp Arg Val Leu Lys Gln
      70              75              80

gga gtc gtg tgg atg aac aaa cct gtg atg ggc tgg ggt tac caa gga      466
Gly Val Val Trp Met Asn Lys Pro Val Met Gly Trp Gly Tyr Gln Gly
      85              90              95

ggg ctt cct gga gga ggt cag act tga gctga gggaaggata ggatttggag      518
Gly Leu Pro Gly Gly Gly Gln Thr *
      100              105

agctgacatt ctgatgagcg gcttcggtta aagctcacia aaacccttcc ctcccccatg      578

ccctttgaaa tcatttgaat caaagattgc gtgtgttaaa gacatgtttg tctgttatct      638

gaaagctgtg gtttctcttt aacagattca gggcctcatc ctttgactcg gaccaagaag      698

gaattatgag                                                                708

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<210> 178
 <211> 1463
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (120)..(1175)

<220>
 <221> misc_feature
 <222> (1)...(1463)
 <223> n = a,t,c or g

```

<400> 178
tttcgtgcaa agaaaactgt gagagagaga atttttaaaaa agcagctggg gcctgaggtt      60

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cct ggc cac gag ttc ctg ctg cag tcg gac cac gag aca gag ctg cga      839
Pro Gly His Glu Phe Leu Leu Gln Ser Asp His Glu Thr Glu Leu Arg
225                               230                               235                               240

gcc tgg cac cgc gcg ctg cgg act gtc atc gag cgg ctg gat cgg gag      887
Ala Trp His Arg Ala Leu Arg Thr Val Ile Glu Arg Leu Asp Arg Glu
                               245                               250                               255

aac ccc ctg gag ctg cgt ctg tcg ggc tct gga ccc gcg gag ctg agc      935
Asn Pro Leu Glu Leu Arg Leu Ser Gly Ser Gly Pro Ala Glu Leu Ser
                               260                               265                               270

gcc ggg gag gac gaa gaa gag gag tcg gag ctg gtg tcc aag ccg ctg      983
Ala Gly Glu Asp Glu Glu Glu Glu Ser Glu Leu Val Ser Lys Pro Leu
                               275                               280                               285

ctg cgc ctc agc agc cgc cgg agc tcc att cgg ggg ccc gaa ggc acc      1031
Leu Arg Leu Ser Ser Arg Arg Ser Ser Ile Arg Gly Pro Glu Gly Thr
                               290                               295                               300

gag cag aac cgc gtg cgc aac aaa cta aag cgg ctc atc gcg aag aga      1079
Glu Gln Asn Arg Val Arg Asn Lys Leu Lys Arg Leu Ile Ala Lys Arg
305                               310                               315                               320

ccg ccc tta caa agc ctg cag gag cgg ggt ctg ctc cga ggt gag ggg      1127
Pro Pro Leu Gln Ser Leu Gln Glu Arg Gly Leu Leu Arg Gly Glu Gly
                               325                               330                               335

gct ggg cca ggt tca tgg ata aga aaa ctc cag cga ggc tca gag tag      1175
Ala Gly Pro Gly Ser Trp Ile Arg Lys Leu Gln Arg Gly Ser Glu *
                               340                               345                               350

agcttcccag aactagacca caaccttctg tgactgctgc tttcccacta cccagattg      1235

tttagggggag aagctgggggt gacctgtacc cctttgccag attgtttgaa gcangggaag      1295

ggaggtggag tgtatttcct tgcccaggcc tggcacaggc agccaggagg accagcctca      1355

cttaaggata aagacctatg ctgagaagag ctctgtgag tgacgctggc acttggcttc      1415

cgctcactc tacttcccca gaccaggtgt tcggctggca gatggaat      1463

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<210> 179
<211> 678
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (122)..(478)

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<400> 179
agtgcggtgg aattctggtt aaaaaaagta cagaatgcaa aaggatatgg cataaaaggc      60

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caagtccgaa aagggtact agtgttctag gtgtctttcc agaaagatta tgcgcatata      120

a    atg tgc aca ctt gca tgt gtg cac aca cat aca cac act ctc ata      166
    Met Cys Thr Leu Ala Cys Val His Thr His Thr His Thr Leu Ile
        1             5             10             15

tac cta aaa tac gaa tgg gag cac atg aca cac aca ttc tgc ctg ctg      214
Tyr Leu Lys Tyr Glu Trp Glu His Met Thr His Thr Phe Cys Leu Leu
        20             25             30

ctt tgt ctg tgc ata att tta tct tcc agg tca tct gtg ctg gtg tct      262
Leu Cys Leu Cys Ile Ile Leu Ser Ser Arg Ser Ser Val Leu Val Ser
        35             40             45

atc agt ctg cta gtc ttt ccc cgc cat gtg gcc att gtt cca gtc ccc      310
Ile Ser Leu Leu Val Phe Pro Arg His Val Ala Ile Val Pro Val Pro
        50             55             60

tcc tat gca cac cca ggt ttc tct agg acc atg tta tcc cag agc cag      358
Ser Tyr Ala His Pro Gly Phe Ser Arg Thr Met Leu Ser Gln Ser Gln
        65             70             75

gtg gac agg aca caa agg gct agg ggt caa tgg ggg tgt tct cgc ctc      406
Val Asp Arg Thr Gln Arg Ala Arg Gly Gln Trp Gly Cys Ser Arg Leu
        80             85             90             95

cag tct gcc ctg cca gcc ccc agt cgt ggg tgg acc tgc cat cag ctt      454
Gln Ser Ala Leu Pro Ala Pro Ser Arg Gly Trp Thr Cys His Gln Leu
        100            105            110

gct ctg ccc act ccc cag gcc tga gctgctggcg aaacaggcaa gtgactgcac      508
Ala Leu Pro Thr Pro Gln Ala *
        115

tgcccatggc cggtcaccag cctcagggtga accccaggag gggttcctac ctagcactca      568

tcatttcctc aacttcacta ctgtgtcgcc ctgtgggaca gggaagtcca agtcggggaa      628

aaagcctgtg gggagggggtt ggtgggagat ggggagccca tatggcccag      678

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<210> 180
<211> 599
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (189)..(512)

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<400> 180
accgaaagct gtaggagttt ataccagtac ttccaattcc aaccttattc tagttttcac      60

cctttccaaa tttgtaattc tctgactata agaaatctgg ctccctgctct ttccctgctg      120

```

ccactgaatt gtatagaggc ggagtcctcg gtgcattcaa gatccggctt cactcgtaac 180

ccactgcc atg gcc gag gaa ggc agt gct gct gga ggt gta atg gac att 230
Met Ala Glu Glu Gly Ser Ala Ala Gly Gly Val Met Asp Ile
1 5 10

aat act gtt tta cag gag gtg ctg aag acc gcc ctc atc cat gat ggc 278
Asn Thr Val Leu Gln Glu Val Leu Lys Thr Ala Leu Ile His Asp Gly
15 20 25 30

cta gca tat gaa att tgc aaa gct gcc aaa gcc tca gac aag tgc caa 326
Leu Ala Tyr Glu Ile Cys Lys Ala Ala Lys Ala Ser Asp Lys Cys Gln
35 40 45

gcc cat ctt tgt gtg ctg tgt gtg ctt gca tcc aac tgt gat gag cct 374
Ala His Leu Cys Val Leu Cys Val Leu Ala Ser Asn Cys Asp Glu Pro
50 55 60

atg tat gtc aag ttg gtg gag gcc ctt tgt gct gaa cac caa atc aac 422
Met Tyr Val Lys Leu Val Glu Ala Leu Cys Ala Glu His Gln Ile Asn
65 70 75

cta att aag gtt gat gac cag aaa cta ggg gaa tcg gta ggc ctc tgt 470
Leu Ile Lys Val Asp Asp Gln Lys Leu Gly Glu Ser Val Gly Leu Cys
80 85 90

aaa act gac aga gag ggg aaa ccg tgt aaa gtg gtt ggt tga agttgta 519
Lys Thr Asp Arg Glu Gly Lys Pro Cys Lys Val Val Gly *
95 100 105

tagtagttac gaactatggc aaggagtctc aggccaagga tatcattgaa gagtacttca 579

aatgcaagaa atgaacaagt 599

<210> 181
<211> 1396
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (68)..(1039)

<400> 181

tttcgtagtt cttagtccgt gcggtggaat tcccggccgc gctccgaacg gcgcctcccg 60

ccccacc atg gcc aac agc gcg agc cgc aac gac ttc gag tgg gtc tac 109
Met Gly Asn Ser Ala Ser Arg Asn Asp Phe Glu Trp Val Tyr
1 5 10

acc gac cag ccg cac acg cag cgg cgc aag gag ata ctg gcc aag tac 157
Thr Asp Gln Pro His Thr Gln Arg Arg Lys Glu Ile Leu Ala Lys Tyr
15 20 25 30

ccg Pro	gcc Ala	atc Ile	aag Lys	gcc Ala 35	ctg Leu	atg Met	cgg Arg	cca Pro	gac Asp 40	ccg Pro	cgc Arg	ctc Leu	aag Lys	tgg Trp 45	gcg Ala	205
gtg Val	ctg Leu	gtg Val	ctg Leu 50	gtg Val	ctg Leu	gtg Val	cag Gln	atg Met 55	ctg Leu	gcc Ala	tgc Cys	tgg Trp	ctg Leu 60	gtg Val	gcg Arg	253
ggg Gly	ctg Leu	gcc Ala 65	tgg Trp	cgc Arg	tgg Trp	ctg Leu	ctg Leu 70	ttc Phe	tgg Trp	gcc Ala	tac Tyr	gcc Ala 75	ttt Phe	ggg Gly	ggc Gly	301
tgc Cys	gtg Val 80	aac Asn	cac His	tcg Ser	ctg Leu	acg Thr 85	ctg Leu	gcc Ala	atc Ile	cac His	gac Asp 90	atc Ile	tcg Ser	cac His	aac Asn	349
gcg Ala 95	gcc Ala	ttc Phe	ggc Gly	acg Thr	ggc Gly 100	cgt Arg	gcg Ala	gca Ala	cgc Arg	aac Asn 105	cgc Arg	tgg Trp	ctg Leu	gcc Ala	gtg Val 110	397
ttc Phe	gcc Ala	aac Asn	ctg Leu	ccc Pro 115	gtg Val	ggg Gly	gtg Val	ccc Pro	tac Tyr 120	gcc Ala	gcc Ala	tcc Ser	ttc Phe	aag Lys 125	aag Lys	445
tac Tyr	cac His	gtg Val	gac Asp 130	cac His	cac His	cgc Arg	tac Tyr	ctg Leu 135	ggc Gly	ggc Gly	gac Asp	ggg Gly	ctg Leu 140	gac Asp	gtg Val	493
gac Asp	gtg Val	ccc Pro 145	acg Thr	cgt Arg	ctg Leu	gag Glu	ggc Gly 150	tgg Trp	ttc Phe	ttc Phe	tgc Cys	acg Thr 155	ccc Pro	gcc Ala	cgc Arg	541
aag Lys	ctg Leu 160	ctc Leu	tgg Trp	ctg Leu	gtg Val	ctg Leu	cag Gln 165	ccc Pro	ttc Phe	ttc Phe	tac Tyr 170	tca Ser	cta Leu	cgg Arg	ccg Pro	589
ctc Leu 175	tgc Cys	gtc Val	cac His	ccc Pro	aag Lys 180	gcc Ala	gtg Val	acc Thr	cgc Arg	atg Met 185	gag Glu	gtg Val	ctc Leu	aac Asn	acg Thr 190	637
ctg Leu	gtg Val	cag Gln	ctg Leu	gcg Ala 195	gcc Ala	gac Asp	ctg Leu	gcc Ala	atc Ile 200	ttt Phe	gcc Ala	ctt Leu	tgg Trp	ggg Gly 205	ctc Leu	685
aag Lys	ccc Pro	gtg Val	gtc Val 210	tac Tyr	ctg Leu	ctg Leu	gcc Ala 215	agc Ser	tcc Ser	ttc Phe	ctg Leu	ggc Gly 220	ctg Leu	ggc Gly	ctg Leu	733
cac His	ccc Pro	atc Ile 225	tcg Ser	ggc Gly	cac His	ttc Phe	gtg Val 230	gcc Ala	gag Glu	cac His	tac Tyr	atg Met 235	ttc Phe	ctc Leu	aag Lys	781
ggc Gly	cac His	gag Glu	acc Thr	tac Tyr	tcc Ser	tac Tyr	tat Tyr 245	ggg Gly	cct Pro	ctc Leu	aac Asn 250	tgg Trp	atc Ile	acc Thr	ttc Phe	829
aat	qtg	qqc	tac	cac	qtg	gag	cac	cac	gac	ttc	ccc	agc	atc	ccg	ggc	877

Asn Val Gly Tyr His Val Glu His His Asp Phe Pro Ser Ile Pro Gly	
255 260 265 270	
tac aac ctg ccg ctg gtg cgg aag atc gcg ccc gag tac tac gac cac	925
Tyr Asn Leu Pro Leu Val Arg Lys Ile Ala Pro Glu Tyr Tyr Asp His	
275 280 285	
ctg ccg cag cac cac tcc tgg gtg aag gtg ctc tgg gat ttt gtg ttt	973
Leu Pro Gln His Ser Trp Val Lys Val Leu Trp Asp Phe Val Phe	
290 295 300	
gag gac tcc ctg ggg ccc tat gcc agg gtg aag cgg gtg tac agg ctg	1021
Glu Asp Ser Leu Gly Pro Tyr Ala Arg Val Lys Arg Val Tyr Arg Leu	
305 310 315	
gca aaa gat ggt ctg tga gcccgg gctgcctcct ggtggtggcc attgtccccc	1075
Ala Lys Asp Gly Leu *	
320	
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Glu Leu Trp Thr Phe Ala Gly Ser Arg Asp Pro Ser Ala Pro Arg Leu	
15 20 25	
gcc tac ggc tac ggc ccg ggc agc ctg cgc gag ctg cgg gcg cgc gag	147
Ala Tyr Gly Tyr Gly Pro Gly Ser Leu Arg Glu Leu Arg Ala Arg Glu	
30 35 40	
ttc agc cgc ctg gca gga act gtc tat ctt gac cat gca ggt gcc acc	195

Phe	Ser	Arg	Leu	Ala	Gly	Thr	Val	Tyr	Leu	Asp	His	Ala	Gly	Ala	Thr	
	45						50					55				
ttg	ttc	tcc	cag	agc	cag	ctc	gaa	agc	ttc	act	agt	gat	ctc	atg	gaa	243
Leu	Phe	Ser	Gln	Ser	Gln	Leu	Glu	Ser	Phe	Thr	Ser	Asp	Leu	Met	Glu	
	60					65					70					
aac	act	tat	ggg	aat	cct	cac	agc	cag	aac	atc	agc	agc	aag	ctc	acc	291
Asn	Thr	Tyr	Gly	Asn	Pro	His	Ser	Gln	Asn	Ile	Ser	Ser	Lys	Leu	Thr	
	75				80					85					90	
cat	gac	act	gtg	gag	cag	gtg	cgc	tac	aga	atc	ctg	gcg	cac	ttc	cac	339
His	Asp	Thr	Val	Glu	Gln	Val	Arg	Tyr	Arg	Ile	Leu	Ala	His	Phe	His	
			95						100					105		
acc	acc	gca	gaa	gac	tac	act	gtg	atc	ttc	act	gcc	ggg	agc	acg	gct	387
Thr	Thr	Ala	Glu	Asp	Tyr	Thr	Val	Ile	Phe	Thr	Ala	Gly	Ser	Thr	Ala	
			110					115					120			
gct	ctc	aaa	ctg	gtg	gca	gag	gcc	ttt	cca	tgg	gtg	tcc	cag	ggc	cca	435
Ala	Leu	Lys	Leu	Val	Ala	Glu	Ala	Phe	Pro	Trp	Val	Ser	Gln	Gly	Pro	
		125					130					135				
gag	agc	agt	ggg	agt	cgc	ttc	tgt	tac	ctc	acc	gac	agc	cac	acc	tcc	483
Glu	Ser	Ser	Gly	Ser	Arg	Phe	Cys	Tyr	Leu	Thr	Asp	Ser	His	Thr	Ser	
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gta	gtg	ggg	atg	agg	aac	gtg	acc	atg	gct	ata	aat	gtc	ata	tcc	atc	531
Val	Val	Gly	Met	Arg	Asn	Val	Thr	Met	Ala	Ile	Asn	Val	Ile	Ser	Ile	
	155				160					165					170	
ccg	gtc	agg	cca	gag	gac	ctg	tgg	tct	gca	gag	gaa	cgt	ggg	gct	tca	579
Pro	Val	Arg	Pro	Glu	Asp	Leu	Trp	Ser	Ala	Glu	Glu	Arg	Gly	Ala	Ser	
			175						180					185		
gcc	agc	aac	cca	gac	tgc	cag	ctg	ccg	cat	ctc	ttc	tgc	tac	cca	gct	627
Ala	Ser	Asn	Pro	Asp	Cys	Gln	Leu	Pro	His	Leu	Phe	Cys	Tyr	Pro	Ala	
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cag	agt	aac	ttt	tct	gga	gtc	aga	tac	ccc	ctg	tcc	tgg	ata	gaa	gag	675
Gln	Ser	Asn	Phe	Ser	Gly	Val	Arg	Tyr	Pro	Leu	Ser	Trp	Ile	Glu	Glu	
		205					210					215				
gtc	aag	tct	ggg	cgg	ttg	cgc	cct	gtg	agc	acg	cct	ggg	aag	tgg	ttt	723
Val	Lys	Ser	Gly	Arg	Leu	Arg	Pro	Val	Ser	Thr	Pro	Gly	Lys	Trp	Phe	
	220					225					230					
gtg	ctg	ctg	gat	gca	gcc	tcc	tac	gtg	agc	acc	tcg	cct	ttg	gac	ctg	771
Val	Leu	Leu	Asp	Ala	Ala	Ser	Tyr	Val	Ser	Thr	Ser	Pro	Leu	Asp	Leu	
	235				240					245					250	
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Ser	Ala	His	Gln	Ala	Asp	Phe	Val	Pro	Ile	Ser	Phe	Tyr	Lys	Ile	Phe	
			255						260					265		
ggg	ttt	cct	aca	ggc	ctg	ggc	gct	ctg	ctg	gtc	cat	aat	cgt	gcg	gct	867
Gly	Phe	Pro	Thr	Gly	Leu	Gly	Ala	Leu	Leu	Val	His	Asn	Arg	Ala	Ala	

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Pro Leu Leu Arg Lys Thr Tyr Phe Gly Gly Gly Thr Ala Ser Ala Tyr			
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cta gca gga gaa gac ttc tac atc ccg agg cag tcg gta gct cag agg			963
Leu Ala Gly Glu Asp Phe Tyr Ile Pro Arg Gln Ser Val Ala Gln Arg			
300	305	310	
ttt gaa gat ggc acc atc tca ttc ctt gat gtt atc gcg cta aaa cat			1011
Phe Glu Asp Gly Thr Ile Ser Phe Leu Asp Val Ile Ala Leu Lys His			
315	320	325	330
gga ttt gac acc cta gag cgc ctc aca ggt gga atg gag aat ata aag			1059
Gly Phe Asp Thr Leu Glu Arg Leu Thr Gly Gly Met Glu Asn Ile Lys			
335	340	345	
cag cac acc ttc acc ttg gct cag tat acc tac atg gcc ctg tcc tct			1107
Gln His Thr Phe Thr Leu Ala Gln Tyr Thr Tyr Met Ala Leu Ser Ser			
350	355	360	
ctc cag tac ccc aat gga gcc cct gtg gtg cgg att tac agc gat tct			1155
Leu Gln Tyr Pro Asn Gly Ala Pro Val Val Arg Ile Tyr Ser Asp Ser			
365	370	375	
gag ttc agc agc cct gag gtt cag ggc ccg atc atc aat ttt aat gtg			1203
Glu Phe Ser Ser Pro Glu Val Gln Gly Pro Ile Ile Asn Phe Asn Val			
380	385	390	
ctg gat gac aaa ggg aac atc att ggt tac tcc cag gtg gac aaa atg			1251
Leu Asp Asp Lys Gly Asn Ile Ile Gly Tyr Ser Gln Val Asp Lys Met			
395	400	405	410
gcc agt ctt tac aac atc cac ctg cga act ggc tgc ttc tgt aac act			1299
Ala Ser Leu Tyr Asn Ile His Leu Arg Thr Gly Cys Phe Cys Asn Thr			
415	420	425	
ggg gcc tgc cag agg cac ctg ggc ata agc aac gag atg gtc agg aag			1347
Gly Ala Cys Gln Arg His Leu Gly Ile Ser Asn Glu Met Val Arg Lys			
430	435	440	
cat ttt cag gct ggt cat gtc tgt ggg gac aat atg gac ctc ata gat			1395
His Phe Gln Ala Gly His Val Cys Gly Asp Asn Met Asp Leu Ile Asp			
445	450	455	
ggg cag ccc aca gga tct gtg agg att tca ttt gga tac atg tcg acg			1443
Gly Gln Pro Thr Gly Ser Val Arg Ile Ser Phe Gly Tyr Met Ser Thr			
460	465	470	
ctg gat gat gtc cag gcc ttt ctt agg ttc atc ata gac act cgc ctg			1491
Leu Asp Asp Val Gln Ala Phe Leu Arg Phe Ile Ile Asp Thr Arg Leu			
475	480	485	490
cac tca tca ggg gac tgg cct gtc cct cag gcc cat gct gac acc ggg			1539
His Ser Ser Gly Asp Trp Pro Val Pro Gln Ala His Ala Asp Thr Gly			
495	500	505	

gag act gga gcc cca tca gca gac agc cag gct gat gtt ata cct gct	1587
Glu Thr Gly Ala Pro Ser Ala Asp Ser Gln Ala Asp Val Ile Pro Ala	
510 515 520	
gtc atg ggc aga cgt agc ctc tcg cct cag gaa gat gcc ctc aca ggc	1635
Val Met Gly Arg Arg Ser Leu Ser Pro Gln Glu Asp Ala Leu Thr Gly	
525 530 535	
tcc agg gtt tgg aac aac tcg tct act gtg aat gct gtg cct gtg gcc	1683
Ser Arg Val Trp Asn Asn Ser Ser Thr Val Asn Ala Val Pro Val Ala	
540 545 550	
cca cct gtg tgt gat gtc gcc aga acc cag ccg act cct tca gag aaa	1731
Pro Pro Val Cys Asp Val Ala Arg Thr Gln Pro Thr Pro Ser Glu Lys	
555 560 565 570	
gct gca gga gtc ctg gag ggg gcc ctt ggg cca cat gtt gtc act aac	1779
Ala Ala Gly Val Leu Glu Gly Ala Leu Gly Pro His Val Val Thr Asn	
575 580 585	
ctt tat ctc tat cca atc aaa tcc tgt gct gca ttt gag gtg acc agg	1827
Leu Tyr Leu Tyr Pro Ile Lys Ser Cys Ala Ala Phe Glu Val Thr Arg	
590 595 600	
tgg cct gta gga aac caa ggg ctg cta tat gac cgg agc tgg atg gtt	1875
Trp Pro Val Gly Asn Gln Gly Leu Leu Tyr Asp Arg Ser Trp Met Val	
605 610 615	
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Val Asn His Asn Gly Val Cys Leu Ser Gln Lys Gln Glu Pro Arg Leu	
620 625 630	
tgc ctg atc cag ccc ttc atc gac ttg cgg caa agg atc atg gtc atc	1971
Cys Leu Ile Gln Pro Phe Ile Asp Leu Arg Gln Arg Ile Met Val Ile	
635 640 645 650	
aaa gcc aaa ggg atg gag cct ata gag gtg cct ctt gag gaa aat agt	2019
Lys Ala Lys Gly Met Glu Pro Ile Glu Val Pro Leu Glu Glu Asn Ser	
655 660 665	
gaa cgg act cag att cgc caa agc agg gtc tgt gct gac aga gta agt	2067
Glu Arg Thr Gln Ile Arg Gln Ser Arg Val Cys Ala Asp Arg Val Ser	
670 675 680	
act tat gat tgt gga gaa aaa att tca agc tgg ttg tca aca ttt ttt	2115
Thr Tyr Asp Cys Gly Glu Lys Ile Ser Ser Trp Leu Ser Thr Phe Phe	
685 690 695	
ggc cgt cct tgt aat ttg atc aaa caa agt tca aac tct caa agg aat	2163
Gly Arg Pro Cys Asn Leu Ile Lys Gln Ser Ser Asn Ser Gln Arg Asn	
700 705 710	
gca aag aag aaa cat gga aaa gat caa ctt cct ggt aca atg gcc acc	2211
Ala Lys Lys Lys His Gly Lys Asp Gln Leu Pro Gly Thr Met Ala Thr	
715 720 725 730	

ctt tct ctg gtg aat gag gca cag tat ctg ctg atc aac aca tcc agt	2259
Leu Ser Leu Val Asn Glu Ala Gln Tyr Leu Leu Ile Asn Thr Ser Ser	
735 740 745	
att ttg gaa ctt cac cgg caa cta aac acc agt gat gag aat gga aag	2307
Ile Leu Glu Leu His Arg Gln Leu Asn Thr Ser Asp Glu Asn Gly Lys	
750 755 760	
gag gaa tta ttc tca ctg aag gat ctc agc ttg cgt ttt cgt gcc aat	2355
Glu Glu Leu Phe Ser Leu Lys Asp Leu Ser Leu Arg Phe Arg Ala Asn	
765 770 775	
att att atc aat gga aaa agg gct ttt gaa gaa gag aaa tgg gat gag	2403
Ile Ile Ile Asn Gly Lys Arg Ala Phe Glu Glu Glu Lys Trp Asp Glu	
780 785 790	
att tca att ggc tct ttg cgt ttc cag gtt ttg ggg cct tgt cac aga	2451
Ile Ser Ile Gly Ser Leu Arg Phe Gln Val Leu Gly Pro Cys His Arg	
795 800 805 810	
tgc cag atg att tgc atc gac cag caa act ggg caa cga aac cag cat	2499
Cys Gln Met Ile Cys Ile Asp Gln Gln Thr Gly Gln Arg Asn Gln His	
815 820 825	
gtt ttc caa aaa ctt tct gag agt cgt gaa aca aag gtg aac ttt ggc	2547
Val Phe Gln Lys Leu Ser Glu Ser Arg Glu Thr Lys Val Asn Phe Gly	
830 835 840	
atg tac ctg atg cat gca tca ttg gat tta tcc tcc cca tgt ttc ctg	2595
Met Tyr Leu Met His Ala Ser Leu Asp Leu Ser Ser Pro Cys Phe Leu	
845 850 855	
tct gta gga tct cag gtg ctc cct gtg ttg aaa gag aat gtg gaa ggt	2643
Ser Val Gly Ser Gln Val Leu Pro Val Leu Lys Glu Asn Val Glu Gly	
860 865 870	
cat gat tta cct gca tct gag aaa cac cag gat gtt acc tcc taa aaa	2691
His Asp Leu Pro Ala Ser Glu Lys His Gln Asp Val Thr Ser *	
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ctgtgaggtg tgcgaagccc cagccgagcg ggtgtgctcg gcctgcacag tcacttatta 180

ctggtctggg ccgaatcggt caggctgaag aatatctatt ccaagcccag tggacagtcc 240

tcaaataaac tgactgtagt aatgccaccc actctttact gcatcggaat ctgggacttc 300

tctatatagc taagaaaaac tatgaagagg cccgttatca tctggccaat gatatttatt 360

ttgccagttg tgcatttggg acagaggaca ttaggacttc aggaggctac ttccacctgg 420

ctaataatatt ctatgacctt aaaaagttgg acctggcaga cacattgtac accaaggtct 480

ctgagatctg gcatgcatat ttgaacaatc actatcaagt cctctcacag gctcacatcc 540

aacaa atg gat tta ctg ggc aaa cta ttt gag aat gac act ggc ttg 587
Met Asp Leu Leu Gly Lys Leu Phe Glu Asn Asp Thr Gly Leu
1 5 10

gat gaa gcc caa gaa gca gaa gcc att cgc atc ctg act tca atc ttg 635
Asp Glu Ala Gln Glu Ala Glu Ala Ile Arg Ile Leu Thr Ser Ile Leu
15 20 25 30

aac att cga gaa tct aca tct gac aaa gcc ccc caa aaa acc atc ttt 683
Asn Ile Arg Glu Ser Thr Ser Asp Lys Ala Pro Gln Lys Thr Ile Phe
35 40 45

gtt ctg aag atc ctg gtc atg ctt tac tac ctg atg atg aat tct tca 731
Val Leu Lys Ile Leu Val Met Leu Tyr Tyr Leu Met Met Asn Ser Ser
50 55 60

aag gca cag gaa tat ggc atg agg gcc ctc agt cta gcc aaa gaa caa 779
Lys Ala Gln Glu Tyr Gly Met Arg Ala Leu Ser Leu Ala Lys Glu Gln
65 70 75

cag ctt gat gtc cat gag caa agc acc att caa gag tta tta agt ctc 827
Gln Leu Asp Val His Glu Gln Ser Thr Ile Gln Glu Leu Leu Ser Leu
80 85 90

att tca act gaa gac cat ccc att act tag t gacccatgag ctctgcatca 878
Ile Ser Thr Glu Asp His Pro Ile Thr *
95 100

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cggtttcctg gggtagcggt acaggcgggc gcttactctg tgcgcttgct tccccaaccc      240
tgcaccggcc   atg cgc ccg gcc ttg gcg gtg ggc ctg gtg ttc gca ggc      289
              Met Arg Pro Ala Leu Ala Val Gly Leu Val Phe Ala Gly
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tgc tgc agt aac gtg atc ttc cta gag ctc ctg gcc cgg aag cat cca      337
Cys Cys Ser Asn Val Ile Phe Leu Glu Leu Leu Ala Arg Lys His Pro
              15             20             25

gga tgt ggg aac att gtg aca ttt gca caa ttt tta ttt att gct gtg      385
Gly Cys Gly Asn Ile Val Thr Phe Ala Gln Phe Leu Phe Ile Ala Val
              30             35             40             45

gaa ggc ttc ctc ttt gaa gct gat ttg gga agg aag cca cca gct atc      433
Glu Gly Phe Leu Phe Glu Ala Asp Leu Gly Arg Lys Pro Pro Ala Ile
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cca ata agg tac tat gcc ata atg gtg acc atg ttc ttc acc gtg agc      481
Pro Ile Arg Tyr Tyr Ala Ile Met Val Thr Met Phe Phe Thr Val Ser
              65             70             75

gtg gtg aac aac tat gcc ctg aat ctc aac att gcc atg ccc ctg cat      529
Val Val Asn Asn Tyr Ala Leu Asn Leu Asn Ile Ala Met Pro Leu His
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atg ata ttt aga tcc ggt tct cta att gcc aac acg att cta gga att      577
Met Ile Phe Arg Ser Gly Ser Leu Ile Ala Asn Thr Ile Leu Gly Ile
              95             100            105

atc att ttg aag aaa aga tac agt ata ttc aaa tat acc tcc att gcc      625
Ile Ile Leu Lys Lys Arg Tyr Ser Ile Phe Lys Tyr Thr Ser Ile Ala
              110             115            120            125

ctg gtg tct gtg ggg ata ttt att tgc act ttt atg tca gca aag cag      673
Leu Val Ser Val Gly Ile Phe Ile Cys Thr Phe Met Ser Ala Lys Gln
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145 150 155	
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Val Trp Trp Leu Leu Gly Ile Gly Ala Leu Thr Phe Ala Leu Leu Met	
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Ser Ala Arg Met Gly Ile Phe Gln Glu Thr Leu Tyr Lys Arg Phe Gly	
175 180 185	
aaa cac tcc aag gag gct ttg ttt tat aat cac gcc ctt cca ctt ccg	865
Lys His Ser Lys Glu Ala Leu Phe Tyr Asn His Ala Leu Pro Leu Pro	
190 195 200 205	
ggg ttc gtc ttc ttg gct tct gat att tat gac cat gca gtt cta ttc	913
Gly Phe Val Phe Leu Ala Ser Asp Ile Tyr Asp His Ala Val Leu Phe	
210 215 220	
aat aag tct gag tta tat gaa att ccc gtc atc gga gtg acc ctg ccc	961
Asn Lys Ser Glu Leu Tyr Glu Ile Pro Val Ile Gly Val Thr Leu Pro	
225 230 235	
atc atg tgg ttc tac ctc ctc atg aac atc atc act cag tac gtg tgc	1009
Ile Met Trp Phe Tyr Leu Leu Met Asn Ile Ile Thr Gln Tyr Val Cys	
240 245 250	
atc cgg ggt gtg ttt atc ctc acc aca gaa tgc gcc tcc ctc acc gtc	1057
Ile Arg Gly Val Phe Ile Leu Thr Thr Glu Cys Ala Ser Leu Thr Val	
255 260 265	
acg ctc gtc gtg acc cta cgc aaa ttt gtg agc ctc atc ttt tcc atc	1105
Thr Leu Val Val Thr Leu Arg Lys Phe Val Ser Leu Ile Phe Ser Ile	
270 275 280 285	
ttg tac ttc cag aac ccc ttc acc ctg tgg cac tgg ctg ggc acc ttg	1153
Leu Tyr Phe Gln Asn Pro Phe Thr Leu Trp His Trp Leu Gly Thr Leu	
290 295 300	
ttt gtc ttc att ggg acc tta atg tac aca gag gtg tgg aac aac cta	1201
Phe Val Phe Ile Gly Thr Leu Met Tyr Thr Glu Val Trp Asn Asn Leu	
305 310 315	
ggg acc aca aaa agt gag cct cag aag gac agc aag aag aac tga ggc	1249
Gly Thr Thr Lys Ser Glu Pro Gln Lys Asp Ser Lys Lys Asn *	
320 325 330	
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gtcgcttctc gggagttctt ggtgttgga tattttacag caaagcagtc gaccaggcct 240

cctcttccca cctgtccagc agcatgaaag cagcatgatt ggccgaccgc aggagaagcc 300

cccagaacca ggcccccaac tcagccatct gcggagggtca aggtgtgagc gacgtctcct 360

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atgggtgacc agcaactgta caagaccaac catgtggccc atggtagtga gaaccttttc 660

taccaacagc caccacttgg cgtccacagc gggctgagcc cactgatggc taccaataca 720

cctactccca ggccagcgag atccggaccc agaagcttac cagcgggtgtc ttacacaagc 780

tggactcttt caccaggtg ttgccaacc aaaacctgcg aattcaggtc aacaat 836

atg gcc cag gtg ctg cac act cag tca gca gtg atg gat gga gcc cct 884

Met Ala Gln Val Leu His Thr Gln Ser Ala Val Met Asp Gly Ala Pro

1

5

10

15

gac agt gct ctc cgc cag ctg ctg tct cag aag ccc atg gag ccc cca 932

Asp Ser Ala Leu Arg Gln Leu Leu Ser Gln Lys Pro Met Glu Pro Pro

20

25

30

gca ccg gct atc cct tcc cgc tac cag cag gtg ccc cag cag cct cac 980

Ala Pro Ala Ile Pro Ser Arg Tyr Gln Gln Val Pro Gln Gln Pro His

35

40

45

cct ggt ttc act ggt ggg ctg tcc aaa cca gct ctt cag gtc ggg cag 1028

Pro Gly Phe Thr Gly Gly Leu Ser Lys Pro Ala Leu Gln Val Gly Gln

50

55

60

cac cct acc caa ggg cac ctg tat tat gac tac cag cag cct ctg gct 1076

His Pro Thr Gln Gly His Leu Tyr Tyr Asp Tyr Gln Gln Pro Leu Ala

65

70

75

80

cag gtg cca gtg cag gga gga cag cca ctg cag gcc cca cag atg ctg 1124

Gln Val Pro Val Gln Gly Gly Gln Pro Leu Gln Ala Pro Gln Met Leu

85

90

95

Figure 1 consists of 15 small bar charts, each representing a different demographic or attitudinal category. The x-axis for all charts represents age groups: 18-24, 25-34, 35-44, 45-54, 55-64, and 65+. The y-axis represents the percentage of respondents. The categories are as follows:

- 1. Age group:** Shows the percentage of respondents in each age group. The percentages are approximately: 18-24 (16.7%), 25-34 (16.7%), 35-44 (16.7%), 45-54 (16.7%), 55-64 (16.7%), and 65+ (16.7%).
- 2. Sex:** Shows the percentage of respondents by sex. The percentages are approximately: Male (50%), Female (50%).
- 3. Education:** Shows the percentage of respondents by education level. The percentages are approximately: High school (33.3%), College (33.3%), Graduate (33.3%).
- 4. Income:** Shows the percentage of respondents by income level. The percentages are approximately: Low (33.3%), Middle (33.3%), High (33.3%).
- 5. Marital status:** Shows the percentage of respondents by marital status. The percentages are approximately: Single (33.3%), Married (33.3%), Divorced (33.3%).
- 6. Religion:** Shows the percentage of respondents by religion. The percentages are approximately: Christian (33.3%), Muslim (33.3%), Other (33.3%).
- 7. Ethnicity:** Shows the percentage of respondents by ethnicity. The percentages are approximately: White (33.3%), Black (33.3%), Other (33.3%).
- 8. Political affiliation:** Shows the percentage of respondents by political affiliation. The percentages are approximately: Democrat (33.3%), Republican (33.3%), Independent (33.3%).
- 9. Employment status:** Shows the percentage of respondents by employment status. The percentages are approximately: Employed (33.3%), Unemployed (33.3%), Retired (33.3%).
- 10. Home ownership:** Shows the percentage of respondents by home ownership. The percentages are approximately: Own (33.3%), Rent (33.3%), Other (33.3%).
- 11. Vehicle ownership:** Shows the percentage of respondents by vehicle ownership. The percentages are approximately: Own (33.3%), Don't own (33.3%), Other (33.3%).
- 12. Travel frequency:** Shows the percentage of respondents by travel frequency. The percentages are approximately: Often (33.3%), Sometimes (33.3%), Never (33.3%).
- 13. Health status:** Shows the percentage of respondents by health status. The percentages are approximately: Good (33.3%), Fair (33.3%), Poor (33.3%).
- 14. Life satisfaction:** Shows the percentage of respondents by life satisfaction. The percentages are approximately: Satisfied (33.3%), Dissatisfied (33.3%), Other (33.3%).
- 15. Future outlook:** Shows the percentage of respondents by future outlook. The percentages are approximately: Optimistic (33.3%), Pessimistic (33.3%), Other (33.3%).

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act aaa ccc atg gca caa agg agt gca cac tgc tct cga cca tct ggc 456
Thr Lys Pro Met Ala Gln Arg Ser Ala His Cys Ser Arg Pro Ser Gly

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15	20	25	30	
tcc tca tct tcc tct ggg gtt ctt atg gtg gga ccc aac ttc agg gtt				504
Ser Ser Ser Ser Ser Gly Val Leu Met Val Gly Pro Asn Phe Arg Val	35	40	45	
ggc aag aag ata gga tgt ggg aac ttc gga gag ctc aga tta ggt gaa				552
Gly Lys Lys Ile Gly Cys Gly Asn Phe Gly Glu Leu Arg Leu Gly Glu	50	55	60	
ggg ctc cca cag gtg tat tac ttt gga cca tgt ggg aaa tat aat gcc				600
Gly Leu Pro Gln Val Tyr Tyr Phe Gly Pro Cys Gly Lys Tyr Asn Ala	65	70	75	
atg gtg ctg gag ctc ctt ggc cct agc ttg gag gac ttg ttt gac ctc				648
Met Val Leu Glu Leu Leu Gly Pro Ser Leu Glu Asp Leu Phe Asp Leu	80	85	90	
tgt gac cga aca ttt act ttg aag acg gtg tta atg ata gcc atc cag				696
Cys Asp Arg Thr Phe Thr Leu Lys Thr Val Leu Met Ile Ala Ile Gln	95	100	105	110
ctg ctt tct cga atg gaa tac gtg cac tca aag aac ctc att tac cga				744
Leu Leu Ser Arg Met Glu Tyr Val His Ser Lys Asn Leu Ile Tyr Arg	115	120	125	
gat gtc aag cca gag aac ttc ctg att ggt cga caa ggc aat aag aaa				792
Asp Val Lys Pro Glu Asn Phe Leu Ile Gly Arg Gln Gly Asn Lys Lys	130	135	140	
gag cat gtt ata cac att ata gac ttt gga ctg gcc aag gaa tac att				840
Glu His Val Ile His Ile Ile Asp Phe Gly Leu Ala Lys Glu Tyr Ile	145	150	155	
gac ccc gaa acc aaa aaa cac ata cct tat agg gaa cac aaa agt tta				888
Asp Pro Glu Thr Lys Lys His Ile Pro Tyr Arg Glu His Lys Ser Leu	160	165	170	
act gga act gca aga tat atg tct atc aac acg cat ctt ggc aaa gag				936
Thr Gly Thr Ala Arg Tyr Met Ser Ile Asn Thr His Leu Gly Lys Glu	175	180	185	190
caa agc cgg aga gat gat ttg gaa gcc cta ggc cat atg ttc atg tat				984
Gln Ser Arg Arg Asp Asp Leu Glu Ala Leu Gly His Met Phe Met Tyr	195	200	205	
ttc ctt cga ggc agc ctc ccc tgg caa gga ctc aag gct gac aca tta				1032
Phe Leu Arg Gly Ser Leu Pro Trp Gln Gly Leu Lys Ala Asp Thr Leu	210	215	220	
aaa gag aga tat caa aaa att ggt gac acc aaa agg aat act ccc att				1080
Lys Glu Arg Tyr Gln Lys Ile Gly Asp Thr Lys Arg Asn Thr Pro Ile	225	230	235	
gaa gct ctc tgt gag aac ttt cca gag gag atg gca acc tac ctt cga				1128
Glu Ala Leu Cys Glu Asn Phe Pro Glu Glu Met Ala Thr Tyr Leu Arg	240	245	250	

tat gtc agg cga ctg gac ttc ttt gaa aaa cct gat tat gag tat tta	1176
Tyr Val Arg Arg Leu Asp Phe Phe Glu Lys Pro Asp Tyr Glu Tyr Leu	
255 260 265 270	
cgg acc ctc ttc aca gac ctc ttt gaa aag aaa ggc tac acc ttt gac	1224
Arg Thr Leu Phe Thr Asp Leu Phe Glu Lys Lys Gly Tyr Thr Phe Asp	
275 280 285	
tat gcc tat gat tgg gtt ggg aga cct att cct act cca gta ggg tca	1272
Tyr Ala Tyr Asp Trp Val Gly Arg Pro Ile Pro Thr Pro Val Gly Ser	
290 295 300	
gtt cac gta gat tct ggt gca tct gca ata act cga gaa agc cac aca	1320
Val His Val Asp Ser Gly Ala Ser Ala Ile Thr Arg Glu Ser His Thr	
305 310 315	
cat agg gat cgg cca tca caa cag cag cct ctt cga aat cag gtg gtt	1368
His Arg Asp Arg Pro Ser Gln Gln Gln Pro Leu Arg Asn Gln Val Val	
320 325 330	
agc tca acc aat gga gag ctg aat gtt gat gat ccc acg gga gcc cac	1416
Ser Ser Thr Asn Gly Glu Leu Asn Val Asp Asp Pro Thr Gly Ala His	
335 340 345 350	
tcc aat gca cca atc aca gct cat gcc gag gtg gag gta gtg gag gaa	1464
Ser Asn Ala Pro Ile Thr Ala His Ala Glu Val Glu Val Val Glu Glu	
355 360 365	
gct aag tgc tgc tgt ttc ttt aag agg aaa agg aag aag act gct cag	1512
Ala Lys Cys Cys Cys Phe Phe Lys Arg Lys Arg Lys Lys Thr Ala Gln	
370 375 380	
cgc cac aag tga cca gtgcctccca ggagtcctca ggccctgggg actctgactc	1567
Arg His Lys *	
385	
aattgtacct gcagctcctg ccattttctca ttggaaggga ctctcttttg ggggaggggtg	1627
gatatccaaa ctaaaaagaa gaaaacagat gccccagaa ggggccagtg cgggcagcca	1687
gggcctagtg ggtcattggc catctccgcc tgcctaaggc tctgagcagg tcccagagct	1747
gctgttcctc cactgcttgc ccataggggt gcctggttga ctctccttcc cattgtttac	1807
agtgaagggtg tcattcacia aaactcaagg actgctattc tccttcttcc ccttagttta	1867
ctcctggttt ttaccccacc ctcaaccctc tccagcataa aacctagtg gctaaaggct	1927
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cagacctggg ctggagaaga accttctccg tatcccaggt gtgcctggca gtatggtttc	2047
ctcttctct gtgcctgtgc agcattcatc ccagctggcc ttgggggttca ggttccttct	2107
tccctccctc ctgtgaagtt aactgtagg acacaagctg tgagcaatct gcagtctact	2167

gtccctgtgt gttggcgttc ttagcttttt tgacaaactc ttttctccag gtagtaggac 2227
aatgaaaatt gttttaagca aaggaaagaa aactgacttt gttgcacttt tagttttttt 2287
aaaaaaaaa aaaacaaaaa catgaaaaa a 2318

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cctggctgtg gtggcctgtg gcaatcggct ggaggagacg ctggtcatgc tcaaatacagc 180
tgtgcttttt agccacagga agatccaatt ccacatcttc actgaagact ctctgaagcc 240
cgagtttgat aagcagttac gccatggcct gactcatata caaagaagtt tgagcacaga 300
atctacccca tcacattttc tgttggaac cctcaggagt ggaagaaatt gttcaaacc 360
tgtgctgccc agagactctt tcttccggtg attttaaagg atgtggactc acttctctac 420
gtggacaccg atgtcctctt tctgagacct gttgatgaca tctggaagct tctgaggctg 480
tttaattcca ccagcttgc agcc atg gcc cct gag cac gaa atc ccc aag 531
Met Ala Pro Glu His Glu Ile Pro Lys
1 5
att ggc tgg tac agc cgc ttt gct agg cat cct ttc tat ggc tct gca 579
Ile Gly Trp Tyr Ser Arg Phe Ala Arg His Pro Phe Tyr Gly Ser Ala
10 15 20 25
gga gtt aat tca gga gtc atg tta atg aat tta act cgg ata aga agt 627
Gly Val Asn Ser Gly Val Met Leu Met Asn Leu Thr Arg Ile Arg Ser
30 35 40
acc cag ttc aag aac agc atg att cca aca ggc ctg gct tgg gag gac 675
Thr Gln Phe Lys Asn Ser Met Ile Pro Thr Gly Leu Ala Trp Glu Asp
45 50 55
atg ttg tac cct ctg tac cag aag tac aag aat gcc atc acg tgg gga 723
Met Leu Tyr Pro Leu Tyr Gln Lys Tyr Lys Asn Ala Ile Thr Trp Gly
60 65 70
gac cag gat tta tta aat att att ttt tat ttc aac cca gag tgt ctc 771
Asp Gln Asp Leu Leu Asn Ile Ile Phe Tyr Phe Asn Pro Glu Cys Leu

75	80	85	
tat gta ttc ccc tgc cag tgg aac tac cgt ccc gat cac tgc atg tac			819
Tyr Val Phe Pro Cys Gln Trp Asn Tyr Arg Pro Asp His Cys Met Tyr			
90	95	100	105
gga agc aac tgc aga gag gct gag cat gaa ggt gtg tct gtt ctg cat			867
Gly Ser Asn Cys Arg Glu Ala Glu His Glu Gly Val Ser Val Leu His			
	110	115	120
gga aac cga ggc gtc tac cat gac gat aag caa cca acg ttc aga gca			915
Gly Asn Arg Gly Val Tyr His Asp Asp Lys Gln Pro Thr Phe Arg Ala			
	125	130	135
ctc tat gaa gca ata cgg gat ttt ccc ttt caa gac aat ctc ttt caa			963
Leu Tyr Glu Ala Ile Arg Asp Phe Pro Phe Gln Asp Asn Leu Phe Gln			
	140	145	150
tcc atg tat tac ccc ctt cag ctg aag ttt ttg gag act gtg cac act			1011
Ser Met Tyr Tyr Pro Leu Gln Leu Lys Phe Leu Glu Thr Val His Thr			
	155	160	165
tta tgt gga cga atc ccg caa gtt ttt ctg aag caa att gag aaa aca			1059
Leu Cys Gly Arg Ile Pro Gln Val Phe Leu Lys Gln Ile Glu Lys Thr			
	170	175	180
atg aaa agg gct tat gag aaa cac gtc atc atc cat gtt ggc ccc aac			1107
Met Lys Arg Ala Tyr Glu Lys His Val Ile Ile His Val Gly Pro Asn			
	190	195	200
cag atg cac tga ata ttttgtcttg ttgcaagtca attaggtgtc ttgtgaacaa			1162
Gln Met His *			
	205		
ggaaataacta atctctaagc tgcctgggtc tttttgtgtg aatatttaaat ggtgctccat			1222
gactgttgag ttttaaaaac ctcgttaaat tttgccaaat cagttgcccc caaaagggaa			1282
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ggacc	atg aac gtg ttc cga atc ctc ggc gac ctg agc cac ctc ctg	167
	Met Asn Val Phe Arg Ile Leu Gly Asp Leu Ser His Leu Leu	
	1 5 10	
gcc atg atc ttg ctg ctg ggg aag atc tgg agg tcc aag tgc tgc aag	215	
Ala Met Ile Leu Leu Leu Gly Lys Ile Trp Arg Ser Lys Cys Cys Lys		
15 20 25 30		
ggc atc tct ggg aag agc cag atc ctg ttt gct ctc gtc ttc acc acc	263	
Gly Ile Ser Gly Lys Ser Gln Ile Leu Phe Ala Leu Val Phe Thr Thr		
35 40 45		
agg tac ctg gac ctg ttc acc aac ttc atc tcc atc tac aac aca gta	311	
Arg Tyr Leu Asp Leu Phe Thr Asn Phe Ile Ser Ile Tyr Asn Thr Val		
50 55 60		
atg aag gtg gtt ttt ctc ctc tgt gcc tat gtt aca gtg tac atg ata	359	
Met Lys Val Val Phe Leu Leu Cys Ala Tyr Val Thr Val Tyr Met Ile		
65 70 75		
tat ggg aaa ttc cgt aaa act ttt gac agt gag aat gac aca ttc cgc	407	
Tyr Gly Lys Phe Arg Lys Thr Phe Asp Ser Glu Asn Asp Thr Phe Arg		
80 85 90		
ctg gag ttt ctt ctg gtc cca gtc att ggc ctt tcc ttc ctt gaa aac	455	
Leu Glu Phe Leu Leu Val Pro Val Ile Gly Leu Ser Phe Leu Glu Asn		
95 100 105 110		
tac agt ttc act ctg ctg gag atc ctc tgg act ttc tct atc tat ctg	503	
Tyr Ser Phe Thr Leu Leu Glu Ile Leu Trp Thr Phe Ser Ile Tyr Leu		
115 120 125		
gaa tca gtg gct atc ctg ccc cag ctc ttc atg atc agc aag act gga	551	
Glu Ser Val Ala Ile Leu Pro Gln Leu Phe Met Ile Ser Lys Thr Gly		
130 135 140		
gag gct gag acc ata act act cac tac ctg ttc ttt ctg ggt ctg tac	599	
Glu Ala Glu Thr Ile Thr Thr His Tyr Leu Phe Phe Leu Gly Leu Tyr		
145 150 155		
cgg gca ctc tac ctg gct aac tgg atc agg cgg tac cag act gag aat	647	
Arg Ala Leu Tyr Leu Ala Asn Trp Ile Arg Arg Tyr Gln Thr Glu Asn		
160 165 170		
ttc tat gac caa att gca gtc gtg tct gga gta gta caa acc atc ttc	695	
Phe Tyr Asp Gln Ile Ala Val Val Ser Gly Val Val Gln Thr Ile Phe		
175 180 185 190		
tac tgt gac ttc ttc tac ttg tat gtg acc aaa gtc ctt aag gga aag	743	
Tyr Cys Asp Phe Phe Tyr Leu Tyr Val Thr Lys Val Leu Lys Gly Lys		
195 200 205		
aag tta agt ctt cca atg cca atc tga ggacc ttcagagaca gtctacgcct	795	
Lys Leu Ser Leu Pro Met Pro Ile *		
210 215		
taacaagcac atgaaggaaa ctattctgaa tgttctcttt ggcaacttat ccataatttg	855	

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ggatcaaatg ttaaaaccag aaaagtgttt agtgtggatt tcagcaaac ctgatcatcc 915
caccagaag accttctcat caatagatcg cccttaaaga ccattgtaa ggtcataaaa 975
aacctcggcc aactgcacaa agatggtgcc tctactgcaac aagaaacctt aaggtgtctt 1035
accgacgaaa taaaaaacat aaatgattgt tctccaaggc ctgagggcaa gactcatgat 1095
gagcaagtca accccaatct ggaacaatgt ccctcctctt agaatgtccc aactaaagac 1155
cagttaaaat attagggtag gttcttgtga atttccactt tccaggtaga tgaccaaatt 1215
taggtgggtca agatataaag gtgtcagcta gttttaagtg tgaaacttat ttcactttca 1275
cactgccttc aggccagaag caaaccaaat ttaccaggtt tggctggagg agttttgtga 1335
ctcatctttt actggtttga attttttcaa accagtggct gatacctgcc ttgtacttag 1395
taccttaata ccaataacct aatgggtactt aggcgagtag catttgcaca atcactgttt 1455
tacttatgag cagatacaga tatatccaaa cccttaccta ctaggtatcc tgctagggtt 1515
ttcaattcca attcttgtat taagtttttt cctttcagtt ttaggtgcga aagtaatcag 1575
tcaatccaat atccccatc tttgtcttga aacaaaaact gttttaagac gtctacgttg 1635
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<213> Homo sapiens

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accggggccg gagacgtggc agccgccctg cccgccagaa agtttcctag aagtttgctg 120
ggcgcgggcg cacgactgac tggctggacc      atg aac gtg ttc cga atc ctc 171
                                   Met Asn Val Phe Arg Ile Leu
                                   1                               5

ggc gac ctg agc cac ctc ctg gcc atg atc ttg ctg ctg ggg aag atc 219
Gly Asp Leu Ser His Leu Leu Ala Met Ile Leu Leu Leu Gly Lys Ile
      10                15                20

tgg agg tcc aag tgc tgc aag ggc atc tct ggg aag agc cag atc ctg 267
Trp Arg Ser Lys Cys Cys Lys Gly Ile Ser Gly Lys Ser Gln Ile Leu
      25                30                35

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ttt gct ctc gtc ttc acc acc agg tac ctg gac ctg ttc acc aac ttc	315
Phe Ala Leu Val Phe Thr Thr Arg Tyr Leu Asp Leu Phe Thr Asn Phe	
40 45 50 55	
atc tcc atc tac aac aca gta atg aag atc ctc tgg act ttc tct atc	363
Ile Ser Ile Tyr Asn Thr Val Met Lys Ile Leu Trp Thr Phe Ser Ile	
60 65 70	
tat ctg gaa tca gtg gct atc ctg ccc cag ctc ttc atg atc agc aag	411
Tyr Leu Glu Ser Val Ala Ile Leu Pro Gln Leu Phe Met Ile Ser Lys	
75 80 85	
act gga gag gct gag acc ata act act cac tac ctg ttc ttt ctg ggt	459
Thr Gly Glu Ala Glu Thr Ile Thr Thr His Tyr Leu Phe Phe Leu Gly	
90 95 100	
ctg tac cgg gca ctc tac ctg gct aac tgg atc aag cgg tac cag act	507
Leu Tyr Arg Ala Leu Tyr Leu Ala Asn Trp Ile Lys Arg Tyr Gln Thr	
105 110 115	
gag aat ttc tat gac caa att gca gtc ggg tct gga gta gta caa acc	555
Glu Asn Phe Tyr Asp Gln Ile Ala Val Gly Ser Gly Val Val Gln Thr	
120 125 130 135	
atc ttc tac tgt gac ttc ttc tac ttg tat gtg acc aaa gtc ctt aag	603
Ile Phe Tyr Cys Asp Phe Phe Tyr Leu Tyr Val Thr Lys Val Leu Lys	
140 145 150	
gga aag aag tta agt ctt cca atg cca atc tga ggaccttc agagacagtc	654
Gly Lys Lys Leu Ser Leu Pro Met Pro Ile *	
155 160	
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ta	716

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gtaacctcca cctcccgggt tcaagcgact ctggtgcctc agcctcctga gtagctggga	120
ttacaggcac ctgccaccat gccagctaa tttttatatt tttaagagat gggggttcac	180
catgttggcc aggctggtct caaactcctg acctcaggcg atccgcccac cttggcctcc	240

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Met Val Ala
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Lys Asp Arg Gln Leu Pro Thr Leu Met Ala Gln Pro Pro Gln Thr Val
5 10 15

gta cag gtg ctt gca gtg aaa acc acg cag cag ctc cct aaa ctg cag 151
Val Gln Val Leu Ala Val Lys Thr Thr Gln Gln Leu Pro Lys Leu Gln
20 25 30 35

cag gct ccg aac caa cca aaa atc tac gtg caa ccc caa acc ccc cag 199
Gln Ala Pro Asn Gln Pro Lys Ile Tyr Val Gln Pro Gln Thr Pro Gln
40 45 50

agc caa atg tcg ctc cca gct tct tca gag aaa cag acg gca agc cag 247
Ser Gln Met Ser Leu Pro Ala Ser Ser Glu Lys Gln Thr Ala Ser Gln
55 60 65

gtg gag cag cca att ata acc caa gga tcc tct gtt aca aag ata act 295
Val Glu Gln Pro Ile Ile Thr Gln Gly Ser Ser Val Thr Lys Ile Thr
70 75 80

ttt gag ggg cgc cag cct ccc aca gtt aca aag ata act ggt ggc agt 343
Phe Glu Gly Arg Gln Pro Pro Thr Val Thr Lys Ile Thr Gly Gly Ser
85 90 95

tct gtg cct aag ctg aca tca cca gtt aca agc ata tct ccc att cag 391
Ser Val Pro Lys Leu Thr Ser Pro Val Thr Ser Ile Ser Pro Ile Gln
100 105 110 115

gcc tct gag aag aca gca gtg tct gac att ttg aaa atg tct ttg atg 439
Ala Ser Glu Lys Thr Ala Val Ser Asp Ile Leu Lys Met Ser Leu Met
120 125 130

gaa gct cag att gat aca aat gta gaa cat atg ata gtg gat ccc cca 487
Glu Ala Gln Ile Asp Thr Asn Val Glu His Met Ile Val Asp Pro Pro
135 140 145

aag aag gct ctt gcc act agc atg ctc act ggt gaa gca gga tca tta 535
Lys Lys Ala Leu Ala Thr Ser Met Leu Thr Gly Glu Ala Gly Ser Leu
150 155 160

ccc tcc acc cac atg gtg gtg gca ggg atg gcg aat tcc act ccc cag 583
Pro Ser Thr His Met Val Val Ala Gly Met Ala Asn Ser Thr Pro Gln
165 170 175

caa cag aaa tgt aga gag tcc tgt tcg agt cca tcc act gtt ggc tct 631
Gln Gln Lys Cys Arg Glu Ser Cys Ser Ser Pro Ser Thr Val Gly Ser
180 185 190 195

tcc cta acg aca agg aaa att gat cca cca gca gtg cct gcg aca ggc 679
Ser Leu Thr Thr Arg Lys Ile Asp Pro Pro Ala Val Pro Ala Thr Gly
200 205 210

cag ttc atg cgt att cag aat gta ggc caa aag aaa gct gaa gag agt	727
Gln Phe Met Arg Ile Gln Asn Val Gly Gln Lys Lys Ala Glu Glu Ser	
215 220 225	

cca gca gaa att atc atc cag gct att cct cag tat gct att cct tgt	775
Pro Ala Glu Ile Ile Ile Gln Ala Ile Pro Gln Tyr Ala Ile Pro Cys	
230 235 240	

cac tcc agc tcc aat gtg gtg gtg gag ccc agt ggg ctt ctt gag cta	823
His Ser Ser Ser Asn Val Val Val Glu Pro Ser Gly Leu Leu Glu Leu	
245 250 255	

aac aac ttc act agt caa cag ctg gat gat gag gag aca gca atg gag	871
Asn Asn Phe Thr Ser Gln Gln Leu Asp Asp Glu Glu Thr Ala Met Glu	
260 265 270 275	

cag gac ata gac agt agc acg gag gat gga act gaa ccc agc cct tct	919
Gln Asp Ile Asp Ser Ser Thr Glu Asp Gly Thr Glu Pro Ser Pro Ser	
280 285 290	

cag agc tct gct gaa cgg tcc tag tgtttggaca caatagtgca ctttaaaacc	973
Gln Ser Ser Ala Glu Arg Ser *	
295	

tgcttggtta ccaagtgtcc agggaaaccc ttgtattttg atgactaaaa agagcacttt	1033
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gcccgtactt aggctgtgga ccctaaaaca gcagtgtttc aacaagatgt tgctgcagga	1093
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gagctcccat taggagccgc tggctgcggc agcaggggac tagcgtgaga gttggctaaa	180
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aaaaagaaaa gaac atg gag gca gat ata atc aca aat ctt cga tgc agg	230
Met Glu Ala Asp Ile Ile Thr Asn Leu Arg Cys Arg	
1 5 10	

ctc aaa gag gct gaa gaa gag cga cta aaa gct gca cag tat ggt tta	278
Leu Lys Glu Ala Glu Glu Glu Arg Leu Lys Ala Ala Gln Tyr Gly Leu	
15 20 25	

caa cta gta gag agt caa aat gaa tta cag aat caa ttg gat aaa tgt	326
Gln Leu Val Glu Ser Gln Asn Glu Leu Gln Asn Gln Leu Asp Lys Cys	
30 35 40	
cgt aat gaa atg atg acc atg act gag agt tat gaa caa gaa aaa tat	374
Arg Asn Glu Met Met Thr Met Thr Glu Ser Tyr Glu Gln Glu Lys Tyr	
45 50 55 60	
acc ctt caa aga gaa gtt gaa ctc aag agt cga atg tta gaa agt ttg	422
Thr Leu Gln Arg Glu Val Glu Leu Lys Ser Arg Met Leu Glu Ser Leu	
65 70 75	
agc tgc gaa tgt gaa gct att aaa caa caa caa aaa atg cac ctg gag	470
Ser Cys Glu Cys Glu Ala Ile Lys Gln Gln Gln Lys Met His Leu Glu	
80 85 90	
aaa ttg gaa gaa caa cta agc aga agc cat gga cag gaa gtg aat gaa	518
Lys Leu Glu Glu Gln Leu Ser Arg Ser His Gly Gln Glu Val Asn Glu	
95 100 105	
cta aaa act aag ata gaa aaa ctg aaa gtg gaa tta gat gaa gcc agg	566
Leu Lys Thr Lys Ile Glu Lys Leu Lys Val Glu Leu Asp Glu Ala Arg	
110 115 120	
ctt agt gaa aag cag ctg aag cac caa gta gat cat cag aag gaa ctc	614
Leu Ser Glu Lys Gln Leu Lys His Gln Val Asp His Gln Lys Glu Leu	
125 130 135 140	
ctc tct tgt aaa tca gag gaa ctg cgc gta atg tct gaa cgt gtg cag	662
Leu Ser Cys Lys Ser Glu Glu Leu Arg Val Met Ser Glu Arg Val Gln	
145 150 155	
gaa agc atg tct tca gag atg ctg gct ctt caa att gag ctg aca gaa	710
Glu Ser Met Ser Ser Glu Met Leu Ala Leu Gln Ile Glu Leu Thr Glu	
160 165 170	
atg gag agt atg aag acc acc ctc aaa gaa gaa gtg aat gaa cta caa	758
Met Glu Ser Met Lys Thr Thr Leu Lys Glu Glu Val Asn Glu Leu Gln	
175 180 185	
tac aga caa gaa cag cta gaa ctt ctt att act aac cta atg cgc cag	806
Tyr Arg Gln Glu Gln Leu Glu Leu Leu Ile Thr Asn Leu Met Arg Gln	
190 195 200	
gta gac cgg ctt aaa gag gaa aaa gaa gag cga gag aaa gaa gca gtt	854
Val Asp Arg Leu Lys Glu Glu Lys Glu Glu Arg Glu Lys Glu Ala Val	
205 210 215 220	
tct tac tat aat gcc cta gag aaa gct cgt gta gca aat caa gat ctt	902
Ser Tyr Tyr Asn Ala Leu Glu Lys Ala Arg Val Ala Asn Gln Asp Leu	
225 230 235	
cag gta cag ttg gac cag gca ctc cag caa gcc ttg gat ccc aat agt	950
Gln Val Gln Leu Asp Gln Ala Leu Gln Gln Ala Leu Asp Pro Asn Ser	
240 245 250	
aaa ggc aac tct ttg ttt gca gag gtg gaa gat cga agg gca gca atg	998

Lys Gly Asn Ser Leu Phe Ala Glu Val Glu Asp Arg Arg Ala Ala Met	
255 260 265	
gaa cgt cag ctt atc agt atg aaa gtc aag tat cag tca cta aag aag	1046
Glu Arg Gln Leu Ile Ser Met Lys Val Lys Tyr Gln Ser Leu Lys Lys	
270 275 280	
caa aat gta ttt aac aga gaa cag atg cag aga atg aag tta caa att	1094
Gln Asn Val Phe Asn Arg Glu Gln Met Gln Arg Met Lys Leu Gln Ile	
285 290 295 300	
gcc acg ttg cta cag atg aaa ggg tct caa act gaa ttt gag cag cag	1142
Ala Thr Leu Leu Gln Met Lys Gly Ser Gln Thr Glu Phe Glu Gln Gln	
305 310 315	
gaa cgg ttg ctt gcc atg ttg gag cag aag aat ggt gaa ata aaa cat	1190
Glu Arg Leu Leu Ala Met Leu Glu Gln Lys Asn Gly Glu Ile Lys His	
320 325 330	
ctt tta ggt gaa att aga aat ctg gag aaa ttt aag aat tta tat gac	1238
Leu Leu Gly Glu Ile Arg Asn Leu Glu Lys Phe Lys Asn Leu Tyr Asp	
335 340 345	
agt atg gaa tcc aag cct tca gtc gac tct ggt act ctg gaa gat aac	1286
Ser Met Glu Ser Lys Pro Ser Val Asp Ser Gly Thr Leu Glu Asp Asn	
350 355 360	
acc tat tat aca gat tta ctt cag atg aag ctg gat aac tta aac aaa	1334
Thr Tyr Tyr Thr Asp Leu Leu Gln Met Lys Leu Asp Asn Leu Asn Lys	
365 370 375 380	
gaa att gaa agc act aaa ggt gaa ttg tcc ata cag cga atg aaa gca	1382
Glu Ile Glu Ser Thr Lys Gly Glu Leu Ser Ile Gln Arg Met Lys Ala	
385 390 395	
tta ttt gag agc cag cgg gct cta gat att gag cga aaa ctt ttt tgc	1430
Leu Phe Glu Ser Gln Arg Ala Leu Asp Ile Glu Arg Lys Leu Phe Cys	
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Lys *	
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gtgctctcgg gggagaagtt tatcgattac cgcctcagaa agaggagaca cagtcctgcc	1666
ctaacagttt agaagataac aacttgcaat tagaaaaatc agtttctata cacacaccag	1726
tagtcagtct ctctcctcac aaaaatctgc ccgtggatat gcagctgaag aaggaaaaga	1786
aatgtgtgaa actcatagga gttcccgtg acgctgaggc cttaagtgaa agaagtggaa	1846
acaccccaaa ctctcccagg ttagctgctg aatcaaagct tcaaacagaa gttaaagaag	1906

gtg cca ggg aga agc aag gag gat ggg ctt tgg act aga aat agc cca	584
Val Pro Gly Arg Ser Lys Glu Asp Gly Leu Trp Thr Arg Asn Ser Pro	
5 10 15	
ggc tcc tcc cag cat cca gaa agt ccc agg ctg ccc aac cct ctc tgg	632
Gly Ser Ser Gln His Pro Glu Ser Pro Arg Leu Pro Asn Pro Leu Trp	
20 25 30 35	
gac aga gga aaa att ggc aag gtt gaa ggt cac cag cac att cag gtt	680
Asp Arg Gly Lys Ile Gly Lys Val Glu Gly His Gln His Ile Gln Val	
40 45 50	
agt act tcc tca gcc tgt gtc tgg cag ctg gct tac cct cca gtt tgg	728
Ser Thr Ser Ser Ala Cys Val Trp Gln Leu Ala Tyr Pro Pro Val Trp	
55 60 65	
ccc aac ctc cct gct gtc cct att cag gat ttc tct caa aag tcc cat	776
Pro Asn Leu Pro Ala Val Pro Ile Gln Asp Phe Ser Gln Lys Ser His	
70 75 80	
ctg ccg tct att gtg gtg gaa tcc agt gag gtg aat gaa gag agt ggg	824
Leu Pro Ser Ile Val Val Glu Ser Ser Glu Val Asn Glu Glu Ser Gly	
85 90 95	
gat ctc cat ttg ccc cat gag gag ctg ctg ctg ctc act gat ggt gag	872
Asp Leu His Leu Pro His Glu Glu Leu Leu Leu Leu Thr Asp Gly Glu	
100 105 110 115	
gaa gag gat gct gag gcc ttc ttc caa gac caa agt gaa gag cca ggt	920
Glu Glu Asp Ala Glu Ala Phe Phe Gln Asp Gln Ser Glu Glu Pro Gly	
120 125 130	
gag gga ggt ggc tca ttc agg ggg cca ctg tga gctgaatg ttctgggcag	971
Glu Gly Gly Gly Ser Phe Arg Gly Pro Leu *	
135 140	
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	1 5 10	

gtt ctg aat cta gtg acg tct gcc agg agc cag aag aca gaa cct cta	97
Val Leu Asn Leu Val Thr Ser Ala Arg Ser Gln Lys Thr Glu Pro Leu	
15 20 25	
agt ggc tct ggg gac cag cca ctc ttc cgt gga gct gat cga tat gac	145
Ser Gly Ser Gly Asp Gln Pro Leu Phe Arg Gly Ala Asp Arg Tyr Asp	
30 35 40	
ttt gcc atc atg ata cct cca gga ggc acg gaa tgc ttt tgg caa ttt	193
Phe Ala Ile Met Ile Pro Pro Gly Gly Thr Glu Cys Phe Trp Gln Phe	
45 50 55	
gcc cac cag act gga tac ttc tat ttc agt tac gag gtt cag cgg aca	241
Ala His Gln Thr Gly Tyr Phe Tyr Phe Ser Tyr Glu Val Gln Arg Thr	
60 65 70 75	
gtg ggg atg tca cat gac cgg cat gtt gct gcc acg gca cat aac cca	289
Val Gly Met Ser His Asp Arg His Val Ala Ala Thr Ala His Asn Pro	
80 85 90	
cag gga ttt ctc ata gac acc tcc cag ggt gtt cgg ggc cag att aac	337
Gln Gly Phe Leu Ile Asp Thr Ser Gln Gly Val Arg Gly Gln Ile Asn	
95 100 105	
ttc tct acc caa gag aca ggt ttt tat cag ctt tgt cta agt aat cag	385
Phe Ser Thr Gln Glu Thr Gly Phe Tyr Gln Leu Cys Leu Ser Asn Gln	
110 115 120	
cat aat cac ttc ggt tct gtg caa gtg tac ctc aac ttt ggg gtc ttc	433
His Asn His Phe Gly Ser Val Gln Val Tyr Leu Asn Phe Gly Val Phe	
125 130 135	
tat gag ggg cct gag act gat cac aaa cag aag gaa aga aaa caa ctg	481
Tyr Glu Gly Pro Glu Thr Asp His Lys Gln Lys Glu Arg Lys Gln Leu	
140 145 150 155	
aat gat act ctg gat gca att gag gac ggc aca caa aag gtg cag aac	529
Asn Asp Thr Leu Asp Ala Ile Glu Asp Gly Thr Gln Lys Val Gln Asn	
160 165 170	
aat atc ttt cac atg tgg cga tac tac aac ttt gcc cgg atg agg aaa	577
Asn Ile Phe His Met Trp Arg Tyr Tyr Asn Phe Ala Arg Met Arg Lys	
175 180 185	
atg gct gac ttt ttc ctt atc caa tca aac tat aac tac gtg aac tgg	625
Met Ala Asp Phe Phe Leu Ile Gln Ser Asn Tyr Asn Tyr Val Asn Trp	
190 195 200	
tgg tcg aca gcc cag agc ctt gtt att att ctt tct ggg atc ctg caa	673
Trp Ser Thr Ala Gln Ser Leu Val Ile Ile Leu Ser Gly Ile Leu Gln	
205 210 215	
ctg tat ttc ttg aag cgt ctc ttc aat gtt cca aca act aca gat aca	721
Leu Tyr Phe Leu Lys Arg Leu Phe Asn Val Pro Thr Thr Thr Asp Thr	
220 225 230 235	
aag aag cca aga tgc taa gctaag gtgactatag caccctggct gttttcttct	775

Lys Lys Pro Arg Cys *
240

ggggcttagt cgaatcagct ttgtaatgtt atgggacaaa aatcaattat ctcattaatg 835
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aaaaaaaaa 903

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Met Ala Thr Pro Ser Leu Arg Gly Arg Leu Ala
1 5 10

cgg ttt ggg aac ccg cgg aag cct gtg ctg aag ccc aat aaa cct ctc 99
Arg Phe Gly Asn Pro Arg Lys Pro Val Leu Lys Pro Asn Lys Pro Leu
15 20 25

att cta gct aac cgc gtc ggg gag cgg cgc cgg gag aag ggc gag gcg 147
Ile Leu Ala Asn Arg Val Gly Glu Arg Arg Arg Glu Lys Gly Glu Ala
30 35 40

act tgc atc acg gag atg tcg gtg atg atg gct tgc tgg aag cag aat 195
Thr Cys Ile Thr Glu Met Ser Val Met Met Ala Cys Trp Lys Gln Asn
45 50 55

gaa ttc cgc gac gat gcg tgc aga aaa gag atc cag ggc ttc ctc gat 243
Glu Phe Arg Asp Asp Ala Cys Arg Lys Glu Ile Gln Gly Phe Leu Asp
60 65 70 75

tgt gcc gcg agg gct cag gtg acc gat ggc tcc tgg ggt gct ttc tca 291
Cys Ala Ala Arg Ala Gln Val Thr Asp Gly Ser Trp Gly Ala Phe Ser
80 85 90

gga aaa gaa tgg ggg aga tag aa gtaatgattc tccctgcctt ttgctaggaa 344
Gly Lys Glu Trp Gly Arg *
95

aggccctttc attcatttgg gaggtatatt attcacgccca aagtgggaaa ggttacagtt 404

ttgaaggctg tgtgatcttg acggatttat tcattgctct gaactttcga gttactgtac 464

gtaaaatgag gctaaccaat accaccttaa agaattgtgt gagtgtcaga tgaagtaatg 524

aatgggaaaa tcatttttgaa aaatgtaa attgctgctcaa gtagacatta ttgtgtgaaa 584

tagaactaaa gagactaaac taaataatga caatagtttg gttcctgtct aggctaattg 644
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Met Pro Val Ala Val Gly
1 5

ccc tac gga cag tcc cag cca agc tgc ttc tac cgt gta aaa atg ggc 101
Pro Tyr Gly Gln Ser Gln Pro Ser Cys Phe Tyr Arg Val Lys Met Gly
10 15 20

ttc gtg atg ggt tgc gcc gtg ggc atg gcg gcc gag gcg ctc ttc ggc 149
Phe Val Met Gly Cys Ala Val Gly Met Ala Ala Glu Ala Leu Phe Gly
25 30 35

acc ttt tcc tgt ctc agg atc gga atg cgg ggt cga gag ctg atg ggc 197
Thr Phe Ser Cys Leu Arg Ile Gly Met Arg Gly Arg Glu Leu Met Gly
40 45 50

ggc att ggg aaa acc atg atg cag agt ggc ggc acc ttt ggc aca ttc 245
Gly Ile Gly Lys Thr Met Met Gln Ser Gly Gly Thr Phe Gly Thr Phe
55 60 65 70

atg gcc att ggg atg ggc atc cga tgc taa c catggttgcc aactacatct 296
Met Ala Ile Gly Met Gly Ile Arg Cys *
75 80

gtcccttccc atcaatccca gcccatgtac taataaaaga aagtctttga gtaaaaaaaaa 356
aaaa 360

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<212> DNA
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ggcctccaca cagcatcctg tacatacgcc acctgggctg ggggtgggga ggcagggcca 1235
ggagcatcga ttaaagatca catcctgggg cttccagggg gctca 1280

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<212> DNA
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<222> (284) .. (1741)

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gcctgcgctg ccgggctttg ggttctgggc ctctgccgct ctctggccct aagtgcctgag 120
ctgccgggaa cggcagcttc tgacgctggg ccattggacg ctgcggaacc aggcttcttc 180
actttgagtt tccgccgcga agcgccagtc cgggccgagg agggagcctt tactacttct 240
ccctggtttc attcatgttc tgaggagggt gtgagaagga acc atg gat ccc aca 295
Met Asp Pro Thr
1
gcc ttg gtg gaa gcc att gtg gaa gaa gtg gcc tgt ccc atc tgt atg 343
Ala Leu Val Glu Ala Ile Val Glu Glu Val Ala Cys Pro Ile Cys Met
5 10 15 20
acc ttc ctg agg gag ccc atg agc att gac tgt ggc cac agc ttc tgc 391
Thr Phe Leu Arg Glu Pro Met Ser Ile Asp Cys Gly His Ser Phe Cys
25 30 35
cac agc tgt ctc tct gga ctc tgg gag atc cca gga gaa tcc cag aac 439
His Ser Cys Leu Ser Gly Leu Trp Glu Ile Pro Gly Glu Ser Gln Asn
40 45 50
tgg ggt tac acc tgt ccc ctc tgt cga gct cct gtc cag cca agg aac 487
Trp Gly Tyr Thr Cys Pro Leu Cys Arg Ala Pro Val Gln Pro Arg Asn
55 60 65
ctg cgg cct aat tgg cag ctg gcc aat gtt gta gaa aaa gtc cgt ctg 535
Leu Arg Pro Asn Trp Gln Leu Ala Asn Val Val Glu Lys Val Arg Leu
70 75 80
cta agg cta cat cca gga atg ggg ctg aag ggt gac ctg tgt gag cgc 583
Leu Arg Leu His Pro Gly Met Gly Leu Lys Gly Asp Leu Cys Glu Arg
85 90 95 100
cat ggg gaa aag ctg aag atg ttc tgc aaa gag gat gtc ttg ata atg 631

His Gly Glu Lys Leu Lys Met Phe Cys Lys Glu Asp Val Leu Ile Met	
105 110 115	
tgt gag gcc tgc agc cag tcc cca gag cat gag gcc cac agt gtt gtg	679
Cys Glu Ala Cys Ser Gln Ser Pro Glu His Glu Ala His Ser Val Val	
120 125 130	
cca atg gag gat gtt gcc tgg gag tac aag tgg gaa ctt cat gag gcc	727
Pro Met Glu Asp Val Ala Trp Glu Tyr Lys Trp Glu Leu His Glu Ala	
135 140 145	
ctc gaa cat ctg aag aaa gag caa gaa gag gcc tgg aag ctt gaa gtt	775
Leu Glu His Leu Lys Lys Glu Gln Glu Glu Ala Trp Lys Leu Glu Val	
150 155 160	
ggg gaa agg aaa cga act gcc acc tgg aag ata cag gtg gaa acc cga	823
Gly Glu Arg Lys Arg Thr Ala Thr Trp Lys Ile Gln Val Glu Thr Arg	
165 170 175 180	
aaa cag agt att gta tgg gag ttt gaa aaa tac cag cga tta cta gag	871
Lys Gln Ser Ile Val Trp Glu Phe Glu Lys Tyr Gln Arg Leu Leu Glu	
185 190 195	
aaa aag cag cca cca cat cgg cag ctg ggg gca gag gta gca gca gct	919
Lys Lys Gln Pro Pro His Arg Gln Leu Gly Ala Glu Val Ala Ala Ala	
200 205 210	
ctg gcc agc cta cag cgg gag gca gcg gag acc atg cag aaa ctg gag	967
Leu Ala Ser Leu Gln Arg Glu Ala Ala Glu Thr Met Gln Lys Leu Glu	
215 220 225	
ttg aac cat agc gag ctc atc cag cag agc cag gtc ctg tgg agg atg	1015
Leu Asn His Ser Glu Leu Ile Gln Gln Ser Gln Val Leu Trp Arg Met	
230 235 240	
att gca gag ttg aaa gag agg tcg cag agg cct gtc cgc tgg atg ttg	1063
Ile Ala Glu Leu Lys Glu Arg Ser Gln Arg Pro Val Arg Trp Met Leu	
245 250 255 260	
cag gat att cag gaa gtg tta aac agg agc aaa tct tgg agc ttg cag	1111
Gln Asp Ile Gln Glu Val Leu Asn Arg Ser Lys Ser Trp Ser Leu Gln	
265 270 275	
cag cca gaa cca atc tcc ctg gag ttg aag aca gat tgc cgt gtg ctg	1159
Gln Pro Glu Pro Ile Ser Leu Glu Leu Lys Thr Asp Cys Arg Val Leu	
280 285 290	
ggg cta aga gag atc ctg aag act tat gca gct gat gtg cgc ttg gat	1207
Gly Leu Arg Glu Ile Leu Lys Thr Tyr Ala Ala Asp Val Arg Leu Asp	
295 300 305	
cca gat act gct tac tcc cgt ctc atc gtg tct gag gac aga aaa cgt	1255
Pro Asp Thr Ala Tyr Ser Arg Leu Ile Val Ser Glu Asp Arg Lys Arg	
310 315 320	
gtg cac tat gga gac acc aac cag aaa ctg cca gac aat cct gag aga	1303
Val His Tyr Gly Asp Thr Asn Gln Lys Leu Pro Asp Asn Pro Glu Arg	

325	330	335	340	
ttt tac cgc tat	aat atc gtc ctg	gga agc cag tgc atc tcc tca ggc	1351	
Phe Tyr Arg Tyr	Asn Ile Val Leu	Gly Ser Gln Cys Ile Ser Ser Gly		
	345	350	355	
cgg cac tac tgg	gag gtg gag gtg	gga gac agg tct gag tgg ggc ctg	1399	
Arg His Tyr Trp	Glu Val Glu Val	Gly Asp Arg Ser Glu Trp Gly Leu		
	360	365	370	
gga gta tgt aag	caa aat gta gac	cgg aag gag gtg gtc tac tta tcc	1447	
Gly Val Cys Lys	Gln Asn Val Asp	Arg Lys Glu Val Val Tyr Leu Ser		
	375	380	385	
ccc cac tat gga	ttc tgg gtg ata	agg ctg agg aag gga aat gag tac	1495	
Pro His Tyr Gly	Phe Trp Val Ile	Arg Leu Arg Lys Gly Asn Glu Tyr		
	390	395	400	
cga gca ggc acc	gat gag tac cca	atc ctg tcc ttg ccg gtc cct cct	1543	
Arg Ala Gly Thr	Asp Glu Tyr Pro	Ile Leu Ser Leu Pro Val Pro Pro		
	405	410	415	
cgc cgg gtg gga	atc ttc gtg gat	tat gag gcc cat gac att tct ttc	1591	
Arg Arg Val Gly	Ile Phe Val Asp	Tyr Glu Ala His Asp Ile Ser Phe		
	425	430	435	
tac aat gtg act	gac tgt ggc tcc	cac atc ttc act ttc ccc cgc tat	1639	
Tyr Asn Val Thr	Asp Cys Gly Ser	His Ile Phe Thr Phe Pro Arg Tyr		
	440	445	450	
ccc ttc cct ggg	cgc ctc ctg ccc	tat ttt agt cct tgc tac agc att	1687	
Pro Phe Pro Gly	Arg Leu Leu Pro	Tyr Phe Ser Pro Cys Tyr Ser Ile		
	455	460	465	
gga acc aac aac	act gct cct ctg	gcc atc tgc tcc ctg gat ggg gag	1735	
Gly Thr Asn Asn	Thr Ala Pro Leu	Ala Ile Cys Ser Leu Asp Gly Glu		
	470	475	480	
gac taa gaaagctacc	accctaacca	cagaggcttg gaattgggcc tggcccccat	1791	
Asp *				
485				
ggggcttgga	ggaccgagcc	actgacaggt atccccctgaa actgagctga gcccagtatc	1851	
caaggattcc	tctgtctgat	ccttttgggtct ttgctaccag gctgaagtct gtcatgaaac	1911	
cacttatttt	aaaaagcaga	ggccccagtca aatgagcatt gcatcccatg agggaagcac	1971	
gacagggctg	atggtgagga	tcagagcagt tctaaggtga ctcgttgggg taaggatcag	2031	
gactttgtcc	atgtagtagc	caaccaccct cttccctgat tcccgtccgg tgtcacagtt	2091	
cagtcagtga	ggatgatgaa	gtagatacag tcttcaggac accattagat gggctttccc	2151	
aataggccaa	aaaaatgctg	cgcataccca gagctgggtg ttgtgctgag gccagtcaga	2211	
ggatgcttcc	cctgagggtt	gctataacta agcaaccttt atgtgactct caccttctga	2271	

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cctcctggca agagaaattc agtgcagcag ggggacacag acctgcccac gccaccccac 2331
tgccgttccc tctctgagca caagctgggc aaatcactgt cccttgact ccagtagacc 2391
agtgtcctag tcttgccctt tttctctaag tggcaggatc agaaaacctg cgagcttttag 2451
tttgtatttt cactttatga atgaggaaac tgaaatggcc ttaaggagc aagttatttc 2511
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<212> DNA
<213> Homo sapiens

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<222> (331)..(1047)

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tctcaccagc agagaacagc tgacggtctt tccataagtg cttctaagag agatgtgtgg 180
taccgccggc taagtagaca gcaactgagc cctccctccc accccagggc tcccagagca 240
acagggagca gggagcatag gacctggccg cagccaggaa tctacactga ccggctcagc 300
ccatgaagta tcttgggctg aagtcacagg          atg aga ctg ttt gta tct gta 351
                                   Met Arg Leu Phe Val Ser Val
                                   1              5

act gtc ctt gtc atc tgt ctt gca gat tta gaa gag gaa tca gaa agc 399
Thr Val Leu Val Ile Cys Leu Ala Asp Leu Glu Glu Glu Ser Glu Ser
      10              15              20

tgg gac aac tct gag gct gaa gag gag gag aaa gcc cct gtg ttg cca 447
Trp Asp Asn Ser Glu Ala Glu Glu Glu Glu Lys Ala Pro Val Leu Pro
      25              30              35

gag agt aca gaa ggg cgg gag ctg acc cag ggc ccg gca gag tcc tcc 495
Glu Ser Thr Glu Gly Arg Glu Leu Thr Gln Gly Pro Ala Glu Ser Ser
      40              45              50              55

tct ctc tca ggc tgt ggg agc tgg cag ccc cgg aag ctg cca gtc ttc 543
Ser Leu Ser Gly Cys Gly Ser Trp Gln Pro Arg Lys Leu Pro Val Phe
      60              65              70

aag tcc ctc cgg cac atg agg cag gtc ctg ggt gcc cct tct ttc cgc 591
Lys Ser Leu Arg His Met Arg Gln Val Leu Gly Ala Pro Ser Phe Arg
      75              80              85

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atg ctg gcc tgg cac gtt ctc atg ggg aac cag gtg atc tgg aaa agc Met Leu Ala Trp His Val Leu Met Gly Asn Gln Val Ile Trp Lys Ser 90 95 100	639
aga gac gtg gac ctc gtc cag tca gct ttt gaa gta ctt cgg acc atg Arg Asp Val Asp Leu Val Gln Ser Ala Phe Glu Val Leu Arg Thr Met 105 110 115	687
ctt ccc gtg ggc tgc gtc cgc atc atc cca tac agc agc cag tac gag Leu Pro Val Gly Cys Val Arg Ile Ile Pro Tyr Ser Ser Gln Tyr Glu 120 125 130 135	735
gag gcc tat cgg tgc aac ttc ctg ggg ctc agc ccg cac gtg cag atc Glu Ala Tyr Arg Cys Asn Phe Leu Gly Leu Ser Pro His Val Gln Ile 140 145 150	783
ccc ccc cac gtg ctc tcc tca gag ttt gct gtc atc gtg gag gtc cac Pro Pro His Val Leu Ser Ser Glu Phe Ala Val Ile Val Glu Val His 155 160 165	831
gca gcc gca cgt tcc acc ctc cac cct gtg ggg tgt gag gat gac cag Ala Ala Ala Arg Ser Thr Leu His Pro Val Gly Cys Glu Asp Asp Gln 170 175 180	879
tct ctc agc aag tac gag ttt gtg gtg acc agt ggg agc cct gta gct Ser Leu Ser Lys Tyr Glu Phe Val Val Thr Ser Gly Ser Pro Val Ala 185 190 195	927
gca gac cga gtg ggc ccc acc atc ctg aat aag att gaa gcg gct ctg Ala Asp Arg Val Gly Pro Thr Ile Leu Asn Lys Ile Glu Ala Ala Leu 200 205 210 215	975
acc aac cag aac ctg tct gtg gat gtg gtg gac cag tgc ctc gtc tgc Thr Asn Gln Asn Leu Ser Val Asp Val Val Asp Gln Cys Leu Val Cys 220 225 230	1023
ctc aag gag gag tgg atg aag taa gcaacagtgt gggtgaggcc cctttgcttg Leu Lys Glu Trp Met Lys * 235	1077
cgaccctgga gaaaacctgg agctgtttcc aaaagaggag ctgggccgtg gccactgagg	1137
gaggagctga gagaagaggt tgggggcggg gttccaactc cacgtccgcc actgcaaagc	1197
tcaggtggcc tcgggaggcg gtcattcatgt ctgcctccgg ctccctgcatg gggaggtggg	1257
ggtctatcat gactagtgt gctgtgaaca ttcctgatcc ggtctctgac aaacacgcct	1317
gtgcacatga gtgtgtcgtg caccttagcc tagcaccgca gttgcgggac ctcaacggcc	1377

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<213> Homo sapiens

<220>

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<222> (90)..(416)

<400> 201

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accactgaag ctgatcatga gatgactgt atg ctg aca cac ccc ctt cag ggg 113
Met Leu Thr His Pro Leu Gln Gly
1 5

cct ggc ctt gac tta ggg ctg cac tgt atc ctc agc aac ggc ctt gca 161
Pro Gly Leu Asp Leu Gly Leu His Cys Ile Leu Ser Asn Gly Leu Ala
10 15 20

gga gcc cct ttt gga ctg ctt tcc cta ttc agc cca aag ttg ggg tgg 209
Gly Ala Pro Phe Gly Leu Leu Ser Leu Phe Ser Pro Lys Leu Gly Trp
25 30 35 40

tgg gag aag agg ggt tgg agt gaa tcc atc tct att caa att cca gct 257
Trp Glu Lys Arg Gly Trp Ser Glu Ser Ile Ser Ile Gln Ile Pro Ala
45 50 55

ggg att act cta gga gtc ttc ctg gct tgt ttt ggg ctc aaa ctt agc 305
Gly Ile Thr Leu Gly Val Phe Leu Ala Cys Phe Gly Leu Lys Leu Ser
60 65 70

tac att gtt tat tgg ctc cca aag tcg gga ttg aag agt gaa aag atg 353
Tyr Ile Val Tyr Trp Leu Pro Lys Ser Gly Leu Lys Ser Glu Lys Met
75 80 85

cag gca atg aat cct tct gca cac tcc tcc ccc cac att cct gac act 401
Gln Ala Met Asn Pro Ser Ala His Ser Ser Pro His Ile Pro Asp Thr
90 95 100

agt aag aac caa taa acacttggtg acggaaaaaa aaaaa 441
Ser Lys Asn Gln *
105

<210> 202

<211> 732

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (72)..(296)

<400> 202

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act ctg gag gca gaa ttc aac agc ccg tcc ccc cca aka cct gag cca																			212
Thr Leu Glu Ala Glu Phe Asn Ser Pro Ser Pro Pro Thr Pro Glu Pro																			
	20						25						30						
ggc gaa ggc ccc cgt aaa ttg gaa gga tgc aka agt tcc aag gtt acg																			260
Gly Glu Gly Pro Arg Lys Leu Glu Gly Cys Thr Ser Ser Lys Val Thr																			
	35						40						45						50
ttt cag cct ccc agt agc att gga tgc agg aaa aaa tac att gag ggt																			308
Phe Gln Pro Pro Ser Ser Ile Gly Cys Arg Lys Lys Tyr Ile Asp Gly																			
	55						60						65						
gaa aaa caa gcc gaa cca gtt gta gtt tta gat cct gtt tct aka cat																			356
Glu Lys Gln Ala Glu Pro Val Val Val Leu Asp Pro Val Ser Thr His																			
	70						75						80						
gaa ccc caa acc aaa gac cag gtt gct gaa aaa gat cca act caa cac																			404
Glu Pro Gln Thr Lys Asp Gln Val Ala Glu Lys Asp Pro Thr Gln His																			
	85						90						95						
aag gag gat gaa ggc gaa att caa cca gaa aac aaa gaa gac agc att																			452
Lys Glu Asp Glu Gly Glu Ile Gln Pro Glu Asn Lys Glu Asp Ser Ile																			
	100						105						110						
gaa aac gtg aga gag aka gac agc tcc aac tgc tga tcca taaaccagaa																			502
Glu Asn Val Arg Glu Thr Asp Ser Ser Asn Cys *																			
	115						120						125						
gcctgacatg tttggaagtc cttttcaata agcacatgat tagtggttgtt atattggcaa																			562
gggctgtaga cattctgctc tggctactgt attcagaata cagggttcttt tctgggtgtca																			622
cttttgtaag tagcaactat aaacataagt aagctgttta gcaaacacaca cattcctagt																			682
agggttttggt tttttgatct ttataaagat gaggtttttt tcctagttac tgtattaagt																			742
atgacttctt ttagaagggtt acaaaaaaat tcagatgttg ataccttttt aggaaatgtg																			802
cataccactc atcaaattgga atgctgaaag tttgaggtgc ttgtatatataa tcggataaac																			862
aaaactgadc aacccaatgt gatttttaaaa gcccccaaag aagcttctgt tttgggtctg																			922
atcctcttga tggagaaaact gcagcagcat ggaaattggt gggtactgtg gcatacaagt																			982
tattttctac agtagactga gataaactga aaactcagga gctggcatca aactcgtagt																			1042
cccatagtca gtgttaatta cacacattgt taactattgg atgaaaaata catgctattg																			1102
attgtgtcca aagcctcccg aggacctccg tggggatgct ctggtagcct gaatacagaa																			1162
ctgaggtgaa agtccaaacc ttgaatttta cagtagtaag ttggtaaacc atgtgctctg																			1222
tgctatgagt taattatggt ttcccaaata ctaatgtggc acaagtacca tatttttatca																			1282
gagttcttat gtacagtatg gtgaagataa gtgacaagca cacatttttc ttgcttcact																			1342

gctgttctat attacacagg tttgttggtg ttttttttaa aaaagaaatt aagcagtagt 1402
tagtctctaa aaatacaatg tttcaggcta ccacagtga taaatagaaa tgtaatcagg 1462
gattaaaaaa aaaa 1476

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<213> Homo sapiens

<220>
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<222> (193)..(564)

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cctgggcaca cacttccgga cacacatgca cacacagggtg cagatatgct gcctggacac 120
acgcagactg acgtgctttt gggaggggtgt gccgtgaagc ctgcagtacg tgtgccgtga 180
ggctcatagt tg atg agg gac ttt ccc tgc tcc acc gtc act ccc cca 228
Met Arg Asp Phe Pro Cys Ser Thr Val Thr Pro Pro
1 5 10
act ctg ccc gcc tct gtc ccc gcc tca gtc ccc gcc tcc atc ccc gcc 276
Thr Leu Pro Ala Ser Val Pro Ala Ser Val Pro Ala Ser Ile Pro Ala
15 20 25
tct gtc ccc tgg cct tgg cgg cta ttt ttg cca cct gcc ttg ggt gcc 324
Ser Val Pro Trp Pro Trp Arg Leu Phe Leu Pro Pro Ala Leu Gly Ala
30 35 40
cag gag tcc cct act gct gtg ggc tgg ggt tgg ggg cac agc agc ccc 372
Gln Glu Ser Pro Thr Ala Val Gly Trp Gly Trp Gly His Ser Ser Pro
45 50 55 60
aag cct gag agg ctg gag ccc atg gct agt ggc tca tcc cca ctg cat 420
Lys Pro Glu Arg Leu Glu Pro Met Ala Ser Gly Ser Ser Pro Leu His
65 70 75
tct ccc cct gac aca gag aag ggg cct tgg tat tta tat tta aga aat 468
Ser Pro Pro Asp Thr Glu Lys Gly Pro Trp Tyr Leu Tyr Leu Arg Asn
80 85 90
gaa gat aat att aat aat gat gga agg aag act ggg ttg cag gga ctg 516
Glu Asp Asn Ile Asn Asn Asp Gly Arg Lys Thr Gly Leu Gln Gly Leu
95 100 105
tgg tct ctc ctg ggg ccc ggg acc cgc ctg gtc ttt cag cca tgc tga 564
Trp Ser Leu Leu Gly Pro Gly Thr Arg Leu Val Phe Gln Pro Cys *
110 115 120

tgaccacacc ccgccaggc cagacaccac cccccacccc actgtcgtgg tggccccaga 624
tctctgtaat tttatgtaga gtttgagctg aagccccgta tatttaattt attttgttaa 684
acatgaaagt gcaccccttc cctccaaaaa aaaaaaa 721

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<212> DNA
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<220>
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<222> (71) .. (2899)

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attcctgacg atg gcc tct gtg gct tcg tgc gat tcg cgt ccg agc tca 109
Met Ala Ser Val Ala Ser Cys Asp Ser Arg Pro Ser Ser
1 5 10
gac gag ctc cct gga gac ccc tct tca caa gaa gaa gat gag gac tat 157
Asp Glu Leu Pro Gly Asp Pro Ser Ser Gln Glu Glu Asp Glu Asp Tyr
15 20 25
gat ttt gaa gat cgg gtc agc gac tcg ggt tca tat tcc tca gcg agt 205
Asp Phe Glu Asp Arg Val Ser Asp Ser Gly Ser Tyr Ser Ser Ala Ser
30 35 40 45
agc gat tat gat gat ctt gag cct gaa tgg ctg gac agt gtg cag aaa 253
Ser Asp Tyr Asp Asp Leu Glu Pro Glu Trp Leu Asp Ser Val Gln Lys
50 55 60
aat gga gag ctg ttt tat ttg gaa ttg agt gag gat gaa gaa gaa agc 301
Asn Gly Glu Leu Phe Tyr Leu Glu Leu Ser Glu Asp Glu Glu Glu Ser
65 70 75
ctc ctt cct gag aca cca act gtg aac cat gtc agg ttc agt gaa aat 349
Leu Leu Pro Glu Thr Pro Thr Val Asn His Val Arg Phe Ser Glu Asn
80 85 90
gag att atc att gaa gat gac tac aaa gaa aga aaa aag tat gaa ccc 397
Glu Ile Ile Ile Glu Asp Asp Tyr Lys Glu Arg Lys Lys Tyr Glu Pro
95 100 105
aaa ctc aag cag ttt acc aaa att tta aga agg aaa aga ctt tta ccc 445
Lys Leu Lys Gln Phe Thr Lys Ile Leu Arg Arg Lys Arg Leu Leu Pro
110 115 120 125
aag cgc tgc aat aaa aaa aat agc aat gac aat gga cca gta tcc att 493
Lys Arg Cys Asn Lys Lys Asn Ser Asn Asp Asn Gly Pro Val Ser Ile
130 135 140

cta aag cat cag tcc aat cag aag aca gga gtc att gtc caa cag cgg	541
Leu Lys His Gln Ser Asn Gln Lys Thr Gly Val Ile Val Gln Gln Arg	
145 150 155	
tac aaa gat gtg aat gtt tat gta aac ccc aaa aag cta act gtt atc	589
Tyr Lys Asp Val Asn Val Tyr Val Asn Pro Lys Lys Leu Thr Val Ile	
160 165 170	
aaa gcc aaa gag cag ctc aag ctt ctg gaa gtg ctg gtt gga att att	637
Lys Ala Lys Glu Gln Leu Lys Leu Leu Glu Val Leu Val Gly Ile Ile	
175 180 185	
cat cag acc aag tgg agc tgg aga aga acc gga aag cag ggt gat gga	685
His Gln Thr Lys Trp Ser Trp Arg Arg Thr Gly Lys Gln Gly Asp Gly	
190 195 200 205	
gag agg ctt gtg gtt cat ggc ctg ctg cca ggg gga tct gct atg aag	733
Glu Arg Leu Val Val His Gly Leu Leu Pro Gly Gly Ser Ala Met Lys	
210 215 220	
agc ggt cag gta ctc att ggt gat gtc ctt gtt gct gtg aat gat gtc	781
Ser Gly Gln Val Leu Ile Gly Asp Val Leu Val Ala Val Asn Asp Val	
225 230 235	
gat gtt act act gaa aac atc gag aga gtt ctg tct tgc att cct gga	829
Asp Val Thr Thr Glu Asn Ile Glu Arg Val Leu Ser Cys Ile Pro Gly	
240 245 250	
cct atg cag gtg aaa ctg aca ttt gaa aat gca tat gat gtg aaa agg	877
Pro Met Gln Val Lys Leu Thr Phe Glu Asn Ala Tyr Asp Val Lys Arg	
255 260 265	
gag aca tcc cat cca aga cag aaa aag aca cag tcc aac aca agt gat	925
Glu Thr Ser His Pro Arg Gln Lys Lys Thr Gln Ser Asn Thr Ser Asp	
270 275 280 285	
tta gtc aag ctt ctc tgg gga gaa gag gtt gaa ggt atc cag cag agt	973
Leu Val Lys Leu Leu Trp Gly Glu Glu Val Glu Gly Ile Gln Gln Ser	
290 295 300	
ggc cta aac act cct cat atc att atg tat ctc aca cta cag ctc gac	1021
Gly Leu Asn Thr Pro His Ile Ile Met Tyr Leu Thr Leu Gln Leu Asp	
305 310 315	
tca gaa acc tca aag gaa gag cag gaa att ctt tat cat tat cca atg	1069
Ser Glu Thr Ser Lys Glu Glu Gln Glu Ile Leu Tyr His Tyr Pro Met	
320 325 330	
tct gaa gca tct cag aaa ctt aaa agt gtg aga ggg att ttt ctc aca	1117
Ser Glu Ala Ser Gln Lys Leu Lys Ser Val Arg Gly Ile Phe Leu Thr	
335 340 345	
ctc tgt gac atg ctg gaa aac gta act ggg aca caa gtt act agt tca	1165
Leu Cys Asp Met Leu Glu Asn Val Thr Gly Thr Gln Val Thr Ser Ser	
350 355 360 365	

tcc ctc ctt tta aat gga aaa caa att cat gtg gct tat tgg aaa gaa Ser Leu Leu Leu Asn Gly Lys Gln Ile His Val Ala Tyr Trp Lys Glu 370 375 380	1213
tct gac aag ttg ttg cta att ggc ctg cct gct gaa gaa gtt cct ctt Ser Asp Lys Leu Leu Leu Ile Gly Leu Pro Ala Glu Glu Val Pro Leu 385 390 395	1261
cct cgt cta agg aac atg ata gaa aat gtc atc caa acc tta aaa ttt Pro Arg Leu Arg Asn Met Ile Glu Asn Val Ile Gln Thr Leu Lys Phe 400 405 410	1309
atg tat ggt tct tta gat agt gcc ttt tgc cag att gag aat gtt cct Met Tyr Gly Ser Leu Asp Ser Ala Phe Cys Gln Ile Glu Asn Val Pro 415 420 425	1357
cgt ttg gat cat ttt ttt aac ttg ttc ttt caa aga gca ctt cag cct Arg Leu Asp His Phe Phe Asn Leu Phe Phe Gln Arg Ala Leu Gln Pro 430 435 440 445	1405
gcg aaa ctg cat tcc agc gcc agt ccc agt gct cag cag tac gat gct Ala Lys Leu His Ser Ser Ala Ser Pro Ser Ala Gln Gln Tyr Asp Ala 450 455 460	1453
tcc agt gca gta ctt tta gac aac ctc cct gga gtc cgg tgg ctc aca Ser Ser Ala Val Leu Leu Asp Asn Leu Pro Gly Val Arg Trp Leu Thr 465 470 475	1501
ctt cca ctg gaa atc aag atg gaa tta gac atg gca tta agt gac ttg Leu Pro Leu Glu Ile Lys Met Glu Leu Asp Met Ala Leu Ser Asp Leu 480 485 490	1549
gag gct gca gat ttt gca gaa ctg tcc gag gat tac tat gac atg agg Glu Ala Ala Asp Phe Ala Glu Leu Ser Glu Asp Tyr Tyr Asp Met Arg 495 500 505	1597
cgg ctg tat aca att ttg ggg tct tct cta ttt tac aag ggt tat ttg Arg Leu Tyr Thr Ile Leu Gly Ser Ser Leu Phe Tyr Lys Gly Tyr Leu 510 515 520 525	1645
ata tgc agt cat ttg ccc aag gat gat ctt att gat att gcc gta tac Ile Cys Ser His Leu Pro Lys Asp Asp Leu Ile Asp Ile Ala Val Tyr 530 535 540	1693
tgt cgc cac tat tgc ctg ctg cct tta gca gca aaa caa aga att ggt Cys Arg His Tyr Cys Leu Leu Pro Leu Ala Ala Lys Gln Arg Ile Gly 545 550 555	1741
cag ttg atc ata tgg aga gaa gtg ttt cct cag cat cac ctc cga cct Gln Leu Ile Ile Trp Arg Glu Val Phe Pro Gln His His Leu Arg Pro 560 565 570	1789
ttg gca gac tca agc act gaa gtc ttt ccg gaa cct gaa gga aga tat Leu Ala Asp Ser Ser Thr Glu Val Phe Pro Glu Pro Glu Gly Arg Tyr 575 580 585	1837
ttt ttg cta gtt gtt ggc ttg aaa cat tat atg cta tgt gta cta tta	1885

815	820	825	
cag cta ata aag aat ttc cat cag tgt tgt ctt tcc att cgt gca gtt			2605
Gln Leu Ile Lys Asn Phe His Gln Cys Cys Leu Ser Ile Arg Ala Val			
830	835	840	845
ttc caa cag aca ttg gtg gaa gag aaa aag aaa gga cta aat agt gga			2653
Phe Gln Gln Thr Leu Val Glu Glu Lys Lys Lys Gly Leu Asn Ser Gly			
	850	855	860
gac cat tca gat tct gca aag tca gtg tct tct ctt aac cct gtt aaa			2701
Asp His Ser Asp Ser Ala Lys Ser Val Ser Ser Leu Asn Pro Val Lys			
	865	870	875
gaa cat ggt gtg ttg ttt gaa tgt tca cct gga aac tgg act gat cag			2749
Glu His Gly Val Leu Phe Glu Cys Ser Pro Gly Asn Trp Thr Asp Gln			
	880	885	890
aaa aaa gca cca cca gtt atg gct tac tgg gta gta ggg aga ctt ttt			2797
Lys Lys Ala Pro Pro Val Met Ala Tyr Trp Val Val Gly Arg Leu Phe			
	895	900	905
ctt cat cca aaa cct caa gaa ctt tat gtc tgt ttt cat gac tca gtc			2845
Leu His Pro Lys Pro Gln Glu Leu Tyr Val Cys Phe His Asp Ser Val			
	910	915	920
aca gaa att gcc att gaa ata gct ttt aaa ttg ttc ttt ggg tta acc			2893
Thr Glu Ile Ala Ile Glu Ile Ala Phe Lys Leu Phe Phe Gly Leu Thr			
	930	935	940
ttg tag ctgtgctttc ttgatgcgta gaaacacgtg catggaggat caaacactgt			2949
Leu *			
cagaattgct gaaatcaata cacaaagaga taaagttag cttcttttta ctattcaata			3009
ttgaacataa tattgttaaa tattgagatg aaatgctgtt ggatttgata cattaaatct			3069
taatgtaata ttgtaagact tttgagaata tacttgatta aaatgtgaaa gaagggattg			3129
ttaacttatt gctatTTTTgG tatataatgt taatttattg actagtttga aataatgtga			3189
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<210> 206
 <211> 3186
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> CDS
 <222> (71)..(2836)

 <400> 206

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gat gtt act act gaa aac atc gag aga gtt ctg tct tgc att cct gga Asp Val Thr Thr Glu Asn Ile Glu Arg Val Leu Ser Cys Ile Pro Gly	829
cct atg cag gtg aaa ctg aca ttt gaa aat gca tat gat gtg aaa agg Pro Met Gln Val Lys Leu Thr Phe Glu Asn Ala Tyr Asp Val Lys Arg	877
gag aca tcc cat cca aga cag aaa aag aca cag tcc aac aca agt gat Glu Thr Ser His Pro Arg Gln Lys Lys Thr Gln Ser Asn Thr Ser Asp	925
tta gtc aag ctt ctc tgg gga gaa gag gtt gaa ggt atc cag cag agt Leu Val Lys Leu Leu Trp Gly Glu Glu Val Glu Gly Ile Gln Gln Ser	973
ggc cta aac act cct cat atc att atg tat ctc aca cta cag ctc gac Gly Leu Asn Thr Pro His Ile Ile Met Tyr Leu Thr Leu Gln Leu Asp	1021
tca gaa acc tca aag gaa gag cag gaa att ctt tat cat tat cca atg Ser Glu Thr Ser Lys Glu Glu Gln Glu Ile Leu Tyr His Tyr Pro Met	1069
tct gaa gca tct cag aaa ctt aaa agt gtg aga ggg att ttt ctc aca Ser Glu Ala Ser Gln Lys Leu Lys Ser Val Arg Gly Ile Phe Leu Thr	1117
ctc tgt gac atg ctg gaa aac gta act ggg aca caa gtt act agt tca Leu Cys Asp Met Leu Glu Asn Val Thr Gly Thr Gln Val Thr Ser Ser	1165
tcc ctc ctt tta aat gga aaa caa att cat gtg gct tat tgg aaa gaa Ser Leu Leu Leu Asn Gly Lys Gln Ile His Val Ala Tyr Trp Lys Glu	1213
tct gac aag ttg ttg cta att ggc ctg cct gct gaa gaa gtt cct ctt Ser Asp Lys Leu Leu Leu Ile Gly Leu Pro Ala Glu Glu Val Pro Leu	1261
cct cgt cta agg aac atg ata gaa aat gtc atc caa acc tta aaa ttt Pro Arg Leu Arg Asn Met Ile Glu Asn Val Ile Gln Thr Leu Lys Phe	1309
atg tat ggt tct tta gat agt gcc ttt tgc cag att gag aat gtt cct Met Tyr Gly Ser Leu Asp Ser Ala Phe Cys Gln Ile Glu Asn Val Pro	1357
cgt ttg gat cat ttt ttt aac ttg ttc ttt caa aga gca ctt cag cct Arg Leu Asp His Phe Phe Asn Leu Phe Phe Gln Arg Ala Leu Gln Pro	1405

gcg aaa ctg cat tcc agc gcc agt ccc agt gct cag cag tac gat gct Ala Lys Leu His Ser Ser Ala Ser Pro Ser Ala Gln Gln Tyr Asp Ala 450 455 460	1453
tcc agt gca gta ctt tta gac aac ctc cct gga gtc cgg tgg ctc aca Ser Ser Ala Val Leu Leu Asp Asn Leu Pro Gly Val Arg Trp Leu Thr 465 470 475	1501
ctt cca ctg gaa atc aag atg gaa tta gac atg gca tta agt gac ttg Leu Pro Leu Glu Ile Lys Met Glu Leu Asp Met Ala Leu Ser Asp Leu 480 485 490	1549
gag gct gca gat ttt gca gaa ctg ggt tat ttg ata tgc agt cat ttg Glu Ala Ala Asp Phe Ala Glu Leu Gly Tyr Leu Ile Cys Ser His Leu 495 500 505	1597
ccc aag gat gat ctt att gat att gcc gta tac tgt cgc cac tat tgc Pro Lys Asp Asp Leu Ile Asp Ile Ala Val Tyr Cys Arg His Tyr Cys 510 515 520 525	1645
ctg ctg cct tta gca gca aaa caa aga att ggt cag ttg atc ata tgg Leu Leu Pro Leu Ala Ala Lys Gln Arg Ile Gly Gln Leu Ile Ile Trp 530 535 540	1693
aga gaa gtg ttt cct cag cat cac ctc cga cct ttg gca gac tca agc Arg Glu Val Phe Pro Gln His His Leu Arg Pro Leu Ala Asp Ser Ser 545 550 555	1741
act gaa gtc ttt ccg gaa cct gaa gga aga tat ttt ttg cta gtt gtt Thr Glu Val Phe Pro Glu Pro Glu Gly Arg Tyr Phe Leu Leu Val Val 560 565 570	1789
ggc ttg aaa cat tat atg cta tgt gta cta tta gaa gct gga ggt tgc Gly Leu Lys His Tyr Met Leu Cys Val Leu Leu Glu Ala Gly Gly Cys 575 580 585	1837
gca tcc aaa gct att ggg agt cct gga cca gac tgt gta tat gtg gat Ala Ser Lys Ala Ile Gly Ser Pro Gly Pro Asp Cys Val Tyr Val Asp 590 595 600 605	1885
caa gtc aaa aca act ctt cac cag ctg gat gga gta gat tct cgc ata Gln Val Lys Thr Thr Leu His Gln Leu Asp Gly Val Asp Ser Arg Ile 610 615 620	1933
gat gaa cgg cta gca tct tct cca gtc ccc tgt ttg tct tgt gct gac Asp Glu Arg Leu Ala Ser Ser Pro Val Pro Cys Leu Ser Cys Ala Asp 625 630 635	1981
tgg ttc ctt act gga tca cgt gaa aaa aca gat agc ttg acc act tcg Trp Phe Leu Thr Gly Ser Arg Glu Lys Thr Asp Ser Leu Thr Thr Ser 640 645 650	2029
cct att ctc agt agg cta caa ggt act tcc aaa gta gca act tct cca Pro Ile Leu Ser Arg Leu Gln Gly Thr Ser Lys Val Ala Thr Ser Pro 655 660 665	2077
aca tgc aga aga acg ctt ttt ggt gac tat tcc tta aag aca cgc aag	2125

Thr 670	Cys	Arg	Arg	Thr	Leu 675	Phe	Gly	Asp	Tyr	Ser 680	Leu	Lys	Thr	Arg	Lys 685	
cct	agt	cct	tcc	tgt	agt	agt	gga	gga	tct	gac	aat	ggt	tgt	gaa	ggt	2173
Pro	Ser	Pro	Ser	Cys 690	Ser	Ser	Gly	Gly	Ser 695	Asp	Asn	Gly	Cys	Glu	Gly 700	
gga	gaa	gat	gat	ggc	ttt	agc	ccc	cat	act	aca	ccg	gat	gca	gta	cgg	2221
Gly	Glu	Asp	Asp	Gly 705	Phe	Ser	Pro	His 710	Thr	Thr	Pro	Asp	Ala	Val	Arg 715	
aag	caa	aga	gaa	tct	cag	ggc	tct	gat	ggt	tta	gaa	gaa	agt	ggg	acc	2269
Lys	Gln	Arg	Glu	Ser	Gln	Gly	Ser 725	Asp	Gly	Leu	Glu	Glu	Ser	Gly	Thr 730	
ttg	ctt	aag	gtc	act	aaa	aag	aag	tct	act	ctt	cca	aat	cca	ttt	cat	2317
Leu	Leu	Lys	Val	Thr	Lys	Lys	Lys 740	Ser	Thr	Leu	Pro	Asn	Pro	Phe	His 745	
ttg	gga	aac	ttg	aaa	aag	gac	ctt	cca	gaa	aaa	gaa	tta	gaa	ata	tat	2365
Leu	Gly	Asn	Leu	Lys	Lys	Asp	Leu 755	Pro	Glu	Lys	Glu	Leu	Glu	Ile	Tyr 765	
aac	aca	gtg	aaa	ctg	aca	tct	ggt	cct	gag	aac	aca	ctt	ttc	cac	tac	2413
Asn	Thr	Val	Lys	Leu 770	Thr	Ser	Gly	Pro	Glu	Asn	Thr	Leu	Phe	His	Tyr 780	
gtt	gcc	tta	gaa	aca	gtg	caa	gga	atc	ttt	att	act	cct	acc	ctt	gaa	2461
Val	Ala	Leu	Glu	Thr	Val	Gln	Gly 790	Ile	Phe	Ile	Thr	Pro	Thr	Leu	Glu 795	
gag	gtg	gca	cag	cta	agt	ggc	tct	atc	cac	cct	cag	cta	ata	aag	aat	2509
Glu	Val	Ala	Gln	Leu	Ser	Gly	Ser 805	Ile	His	Pro	Gln	Leu	Ile	Lys	Asn 810	
ttc	cat	cag	tgt	tgt	ctt	tcc	att	cgt	gca	gtt	ttc	caa	cag	aca	ttg	2557
Phe	His	Gln	Cys	Cys	Leu	Ser	Ile 820	Arg	Ala	Val	Phe	Gln	Gln	Thr	Leu 825	
gtg	gaa	gag	aaa	aag	aaa	gga	cta	aat	agt	gga	gac	cat	tca	gat	tct	2605
Val	Glu	Glu	Lys	Lys	Lys	Gly	Leu 835	Asn	Ser	Gly	Asp	His	Ser	Asp	Ser 845	
gca	aag	tca	gtg	tct	tct	ctt	aac	cct	gtt	aaa	gaa	cat	ggt	gtg	ttg	2653
Ala	Lys	Ser	Val	Ser	Ser	Leu	Asn 850	Pro	Val	Lys	Glu	His	Gly	Val	Leu 860	
ttt	gaa	tgt	tca	cct	gga	aac	tgg	act	gat	cag	aaa	aaa	gca	cca	cca	2701
Phe	Glu	Cys	Ser	Pro	Gly	Asn	Trp 870	Thr	Asp	Gln	Lys	Lys	Ala	Pro	Pro 875	
gtt	atg	gct	tac	tgg	gta	gta	ggg	aga	ctt	ttt	ctt	cat	cca	aaa	cct	2749
Val	Met	Ala	Tyr	Trp	Val	Val	Gly 885	Arg	Leu	Phe	Leu	His	Pro	Lys	Pro 890	
caa	gaa	ctt	tat	gtc	tgt	ttt	cat	gac	tca	gtc	aca	gaa	att	gcc	att	2797
Gln	Glu	Leu	Tyr	Val	Cys	Phe	His	Asp	Ser	Val	Thr	Glu	Ile	Ala	Ile	

895	900	905	
gaa ata gct ttt aaa ttg ttc ttt ggg tta acc ttg tag ctgtgctttc			2846
Glu Ile Ala Phe Lys Leu Phe Phe Gly Leu Thr Leu *			
910	915	920	
ttgatgcgta gaaacacgtg catggaggat caaacactgt cagaattgct gaaatcaata			2906
caciaagaga taaagtttag cttcttttta ctattcaata ttgaacataa tattgttaaa			2966
tattgagatg aaatgctggt ggatttgata cattaaatct taatgtaata ttgtaagact			3026
tttgagaata tacttgatta aaatgtgaaa gaagggattg ttaacttatt gctatttttg			3086
tatataatgt taatttattg actagtttga aataatgtga agtggtttttt atatcagatt			3146
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 <212> DNA
 <213> Homo sapiens

 <220>
 <221> CDS
 <222> (306)..(1496)

 <220>
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 <222> (1)...(1595)
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gtggaaacat	gtcttgcgac	accaccagc gactgctaca acccagcggc ggcgntgntg	120
gtcacggagc	tggggccggg	ggcagcccg gagctggctg ggccccctgc aaggaccgtc	180
tcgggcctgc	ccagccaaga	gtgtgtgcaa cacatcgggtg ctgagcagca gcctgcagtc	240
actggagtat	ctcatcaacg	acatccggcc gcctgcatc aaggagcaga tgctgggcaa	300
gggct	atg aga cgg tgg ccg tgc ccc ggc tac tcg acc acc agc atg		347
	Met Arg Arg Trp Pro Cys Pro Gly Tyr Ser Thr Thr Ser Met		
	1 5 10		
ccc aca tcc gcc tac ccg tct aca gat aag gcc tgc ctg cgg aca tac			395
Pro Thr Ser Ala Tyr Pro Ser Thr Asp Lys Ala Cys Leu Arg Thr Tyr			
15 20 25 30			
gga cat gcg gac agg gcg cag agc cgg gag gca ggc cgc aga aca ggg			443
Gly His Ala Asp Arg Ala Gln Ser Arg Glu Ala Gly Arg Arg Thr Gly			
35 40 45			

tgg gcg gct cgc agg ggc gct cag ccc cac cct gtg cct gct gat gcc	491
Trp Ala Ala Arg Arg Gly Ala Gln Pro His Pro Val Pro Ala Asp Ala	
50 55 60	
cac agg gga gcc agg ctg gct gcc gcc tcg ctg tgg ccg gat gga ggg	539
His Arg Gly Ala Arg Leu Ala Ala Ser Leu Trp Pro Asp Gly Gly	
65 70 75	
tgg cag ggc aac ctc aca tac caa ggc ccc tcc cca cca tcg gtt gcc	587
Trp Gln Gly Asn Leu Thr Tyr Gln Gly Pro Ser Pro Pro Ser Val Ala	
80 85 90	
cca gga cac agt gag ggc ctg ggg gca gcc act gac gcc cat gcc ttc	635
Pro Gly His Ser Glu Gly Leu Gly Ala Ala Thr Asp Ala His Ala Phe	
95 100 105 110	
ctt tat cta agc tgg cag agg cag gga gag aga aac cac tca aaa aca	683
Leu Tyr Leu Ser Trp Gln Arg Gln Gly Glu Arg Asn His Ser Lys Thr	
115 120 125	
gga atg gtt ctt tct ggg cct cct ggg aca ggg gcc cag gcc aag gtg	731
Gly Met Val Leu Ser Gly Pro Pro Gly Thr Gly Ala Gln Ala Lys Val	
130 135 140	
ggg tgc agg agg aaa cag gcg cac cag agt cag ggt ggg ggc agg gca	779
Gly Cys Arg Arg Lys Gln Ala His Gln Ser Gln Gly Gly Gly Arg Ala	
145 150 155	
gcc ccc cca ggg gtc agg cag ctg tgt ctc ccc aca ctg gct ccc cag	827
Ala Pro Pro Gly Val Arg Gln Leu Cys Leu Pro Thr Leu Ala Pro Gln	
160 165 170	
tat tct gga aaa ggg gta cag gag gcc gat agg aag tca ctg ggc cca	875
Tyr Ser Gly Lys Gly Val Gln Glu Ala Asp Arg Lys Ser Leu Gly Pro	
175 180 185 190	
aag tgt ctc ccc acc agc cag gtg aag acc act ctg aca gag gct cca	923
Lys Cys Leu Pro Thr Ser Gln Val Lys Thr Thr Leu Thr Glu Ala Pro	
195 200 205	
ggg act ata cca gtc ccc ctg ttc ctc ctt ccc cta ccc cca cca ttc	971
Gly Thr Ile Pro Val Pro Leu Phe Leu Leu Pro Leu Pro Pro Pro Phe	
210 215 220	
ctt cct aac aca gag ttg cac ccc cat ccc cat tct cca aac cct gga	1019
Leu Pro Asn Thr Glu Leu His Pro His Pro His Ser Pro Asn Pro Gly	
225 230 235	
cta cca tat tcc ccc ttc cct cca ata cat ctt ata ggg ctg ctg ggt	1067
Leu Pro Tyr Ser Pro Phe Pro Pro Ile His Leu Ile Gly Leu Leu Gly	
240 245 250	
aca gtt gtt cag gct gtg cac tgc aca agg gca cct tgt cca agg aga	1115
Thr Val Val Gln Ala Val His Cys Thr Arg Ala Pro Cys Pro Arg Arg	
255 260 265 270	

Glu Arg Lys Asp Ala Glu Ile Gln Lys Leu Lys Asn Val Ile Thr Gln	
215 220 225	
tgg gag gca aag tat aag gaa gta aag gca aga aat gca caa tta ttg	1016
Trp Glu Ala Lys Tyr Lys Glu Val Lys Ala Arg Asn Ala Gln Leu Leu	
230 235 240	
aaa atg ctt cag gaa ggt gaa atg aaa gat aag gca gaa ata ctt ctg	1064
Lys Met Leu Gln Glu Gly Glu Met Lys Asp Lys Ala Glu Ile Leu Leu	
245 250 255	
caa gtt gat gaa tca caa agt atc aag aat gag ctc act att cag gtg	1112
Gln Val Asp Glu Ser Gln Ser Ile Lys Asn Glu Leu Thr Ile Gln Val	
260 265 270 275	
act tca ctt cat gct gca tta gaa caa gaa aga tct aaa gtg aaa gta	1160
Thr Ser Leu His Ala Ala Leu Glu Gln Glu Arg Ser Lys Val Lys Val	
280 285 290	
tta caa gca gag tta gcc aaa tac cag ggt ggc aga aaa ggg aaa aga	1208
Leu Gln Ala Glu Leu Ala Lys Tyr Gln Gly Gly Arg Lys Gly Lys Arg	
295 300 305	
aac tct gaa tcc gac cag tgt agg tga ttaca ttagcctttg aagtcaacac	1260
Asn Ser Glu Ser Asp Gln Cys Arg *	
310 315	
aaagtttaaa acttccagga ttttgcaaag ttgtatatat ttaatgctgt gcaactgcta	1320
aactatgcag tttttgttga aggaactaaa agcaactagc tcctaattgg tctataattt	1380
tatttctttt ggcttaaagt gaaaaagaag aatagagatt ccagcagatt cagtgggtgg	1440
cactatccaa cttctatcac ttg	1463

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 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (160)..(399)

<400> 209	
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tctacagtta tgccccaata gtagccaaag gaaaaagggg gaagatgata gtttgactaa	120
acaaatacca gttcatacat tcttgttcca ataggagtt atg gga gga aaa att	174
Met Gly Gly Lys Ile	
1 5	
att cca agc aat cac aca gga tca act ttt tct cct tgt aga ata tgt	222

Ile	Pro	Ser	Asn	His	Thr	Gly	Ser	Thr	Phe	Ser	Pro	Cys	Arg	Ile	Cys	
				10					15					20		
gtc	atc	aca	ttg	gca	gaa	tct	cat	cca	gtt	ctt	caa	agt	gga	aaa	aca	270
Val	Ile	Thr	Leu	Ala	Glu	Ser	His	Pro	Val	Leu	Gln	Ser	Gly	Lys	Thr	
			25					30					35			
att	aaa	agc	att	tcc	tat	cag	atc	agt	acc	aac	tgt	agc	aga	ctt	cag	318
Ile	Lys	Ser	Ile	Ser	Tyr	Gln	Ile	Ser	Thr	Asn	Cys	Ser	Arg	Leu	Gln	
			40				45				50					
aac	aag	gtc	tct	ggg	aaa	ttt	aag	cgg	gta	tgt	tcc	tgt	aat	tct	gtg	366
Asn	Lys	Val	Ser	Gly	Lys	Phe	Lys	Arg	Val	Cys	Ser	Cys	Asn	Ser	Val	
		55				60				65						
att	atc	tac	tta	cat	cct	cta	tat	tca	tgg	taa	tgacagat	ccaatgaacc				417
Ile	Ile	Tyr	Leu	His	Pro	Leu	Tyr	Ser	Trp	*						
		70			75				80							
ttagaatcca	gtagcatatg	cttagcatatg	ttctctagca	gtttgaggtg	ctaatttttag											477
gtatactttc	acctaaagaa	attctcagct	cccccaaatt	aggtatctca	ggaggtgtag											537
tatctgttat	attaggttct	gtgctactat	ccctataatg	cccaggatgg	aggaggggga											597
aggcaggcct	ttgaaaggag	aactctaata	gcaatataac	aagatatttt	gtcccttcta											657
gttgatttaa	actagtatgt	cgagttctgt	aaaatttagg	tgactaactc	ttctttacca											717
tatattttcca	catgttaaatt	aaacagaaaa	aaaa													751

<210> 210
 <211> 1876
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (813)..(1148)

<400> 210	
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gctgtgtgac	atcaatgggg atctcttccc ccgtccgggc cctaagtctg gggccaggaa 120
aaagaagggt	ctgcattttt gctttgcaac tctaaaagca gcagaatcct ttttttaaaa 180
aggtacttat	gggcacctca ccatataaaa ccgataaaag catacctctt ctggttaagg 240
tggggaggat	cctcgagctc cctgaattgt ccttttacct tgtctcccc tcccccttgt 300
ccctcatggc	accttaaaga tctctgagtc cctccagttc tcaagtttaa ggactctact 360
accatggtaa	gagctgggtcc agcctcagtt tccacaatgc ttttggccac tcgaatccag 420

cctaacaagc acgcagttcc tgatgattgg cctcaggtcc cagagagctc cagcaggtgt	480
aggagtccat gggcctgaca cctttgctgg tctctgctgg atcccgacga agtcaggtcc	540
tttctggaaa ggggttcgaa gtccacatac tctccgact acccccagga agtacgtcct	600
tgggtgtgtg tttgggggag tgagaggaat gaagaaccac tccccctata gcctggccat	660
actccccaag atgagggcag taagggtgctg aggaccctgg aagtaacttg cttttctcaa	720
cttctcagga gaaggccatc agcatttggg agtcaaagaa tttctttttt gaacttgagc	780
ctctgccagg ggccgtggaa gctgtcaagg ag atg gcc agc cta caa aac act	833
Met Ala Ser Leu Gln Asn Thr	
1 5	
gac gtc ttc atc tgc aca agc ccc atc aag atg ttc aag tac tgt ccc	881
Asp Val Phe Ile Cys Thr Ser Pro Ile Lys Met Phe Lys Tyr Cys Pro	
10 15 20	
tat gag aag tat gcc tgg gtg gag aag tac ttt ggc cct gac ttt ctg	929
Tyr Glu Lys Tyr Ala Trp Val Glu Lys Tyr Phe Gly Pro Asp Phe Leu	
25 30 35	
gag cag att gtg ctg acc aga gac aag acc gtg gtc tct gct gac ctt	977
Glu Gln Ile Val Leu Thr Arg Asp Lys Thr Val Val Ser Ala Asp Leu	
40 45 50 55	
ctc ata gac gac cgg ccg gac atc aca ggg gcc gag cca acc ccc agc	1025
Leu Ile Asp Asp Arg Pro Asp Ile Thr Gly Ala Glu Pro Thr Pro Ser	
60 65 70	
tgg gag cat gtc ctc ttc acc gcc tgc cac aac cag cac ctg cag ctg	1073
Trp Glu His Val Leu Phe Thr Ala Cys His Asn Gln His Leu Gln Leu	
75 80 85	
cag ccc ccc cgc cgc agg ctg cac tgc tgg gcg gac gac tgg aag gcc	1121
Gln Pro Pro Arg Arg Arg Leu His Ser Trp Ala Asp Asp Trp Lys Ala	
90 95 100	
att ctg gac agc aag cgg ccc tgc tga gctgg actgtgcttc gggctcctct	1173
Ile Leu Asp Ser Lys Arg Pro Cys *	
105 110	
gtggggctct gacctcaggg ctcccagctc ggggcctgtg gggccagtat gctggctctg	1233
gagtcctctc tagactcctg ggccccatga cctcctgctg catgtccctt cccttcccca	1293
gcccctgccca ggccttaacc tgatcacggg gcagggctgg gccctctggg cgcttgagaca	1353
taacaacgtg gtcccaggcc gttcagcctg acctcaggca gcaggcacca agctgccaga	1413
agcccagggg ctcaggacaa ggaggagttt aggccactgt tcagggggct ggtggccgtc	1473
ttcactccct aaggcaagtt ttttaaggca aaaggggggt cctgttccc aaagtttgca	1533

gccatcagca aggaggacca ggaacccggc gattgaggtg cttccaggtg gggacaagcc 1593
 ccttttggtt tcagccacag cacccttat tccaggtgcc ctgccaacc tgctacccc 1653
 acatgacett ttgtgtattc agcaaaccct cattaggtga cagcggcccc caggctttgt 1713
 gctggggggac gatactggcc ctggcctcga ccagcttaaa ggtttttcac acctttgttc 1773
 ccagggcccc gctcagggcc cagcaaaaag tccgtaggct tgaacatgtg ttgagggcat 1833
 gaaaaataaa tgctgttcat gtgtgtagct caaaaaaaaa aaa 1876

<210> 211
 <211> 3051
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (527) .. (2308)

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 aaccaggggt gctaaaaata accaggccca aatggaccag aagcaactcc catggacttt 180
 ggcttgcaat catggtcaga agagatacag gcacagatcc cactattacg aaggagccaa 240
 aatatctgcc aagataaaaa tggaagtaac tcctctggat ttatgtgtcc aggggtggat 300
 atggaaagac ttgtgaagta ttaatcaaaa atcacccgag gctttttcag actattattc 360
 aaatgacaca gaatgaagac ctccgagaaa acatgtacgg caagttctgg agcatttgct 420
 tcagcacagt gaaagccagt acctaaagat tctaacaagc cttgctgaag ttgctacaac 480
 aaatggatcat aaactgctta gcctctctag caattatgat gctcaa atg aag agc 535
 Met Lys Ser
 1
 ctt tta agg att gtg aga atg ttt tgt cac gtc ttt cga att ggt cca 583
 Leu Leu Arg Ile Val Arg Met Phe Cys His Val Phe Arg Ile Gly Pro
 5 10 15
 tcc tcc ccc agt aat gga att gat atg ggc tac aat ggg aat aaa act 631
 Ser Ser Pro Ser Asn Gly Ile Asp Met Gly Tyr Asn Gly Asn Lys Thr
 20 25 30 35
 cca aaa agc cag gtg ttc aag cct ctg gaa ttg ctt tgg cac tcg tta 679
 Pro Lys Ser Gln Val Phe Lys Pro Leu Glu Leu Leu Trp His Ser Leu
 40 45 50

gat gaa tgg cta gtt tta ata gcc cca gaa ttg atg aaa aac aaa aga	727
Asp Glu Trp Leu Val Leu Ile Ala Pro Glu Leu Met Lys Asn Lys Arg	
55 60 65	
gac tca aca gag atc act tct att tta ctg aaa caa aaa ggc caa gat	775
Asp Ser Thr Glu Ile Thr Ser Ile Leu Leu Lys Gln Lys Gly Gln Asp	
70 75 80	
caa gat gct gct tcc att cct cca ttt gaa cct cca gga cct ggg agc	823
Gln Asp Ala Ala Ser Ile Pro Pro Phe Glu Pro Pro Gly Pro Gly Ser	
85 90 95	
tat gaa aat ctg tcc act ggc aca agg gaa tct aaa cca gat gct ctt	871
Tyr Glu Asn Leu Ser Thr Gly Thr Arg Glu Ser Lys Pro Asp Ala Leu	
100 105 110 115	
gca ggg aga cag gaa gcc agt gca gat tgt cag gat gtt att tct atg	919
Ala Gly Arg Gln Glu Ala Ser Ala Asp Cys Gln Asp Val Ile Ser Met	
120 125 130	
aca gct aac cgg cta agt gct gtc att caa gct ttt tac atg tgc tgt	967
Thr Ala Asn Arg Leu Ser Ala Val Ile Gln Ala Phe Tyr Met Cys Cys	
135 140 145	
tct tgt cag atg cct ccg gga atg act tca cct cgt ttc att gaa ttt	1015
Ser Cys Gln Met Pro Pro Gly Met Thr Ser Pro Arg Phe Ile Glu Phe	
150 155 160	
gtc tgc aaa cat gat gaa gtt tta aaa tgc ttt gtt aat aga aat ccc	1063
Val Cys Lys His Asp Glu Val Leu Lys Cys Phe Val Asn Arg Asn Pro	
165 170 175	
aaa att ata ttt gac cac ttt cac ttt ctc ctt gaa tgt cct gag ttg	1111
Lys Ile Ile Phe Asp His Phe His Phe Leu Leu Glu Cys Pro Glu Leu	
180 185 190 195	
atg tca aga ttc atg cat atc ata aaa gca cag cct ttt aaa gat cgc	1159
Met Ser Arg Phe Met His Ile Ile Lys Ala Gln Pro Phe Lys Asp Arg	
200 205 210	
tgt gaa tgg ttc tat gaa cat ttg cat tca gga cag cca gat tca gat	1207
Cys Glu Trp Phe Tyr Glu His Leu His Ser Gly Gln Pro Asp Ser Asp	
215 220 225	
atg gtg cac agg cca gtg aat gaa aat gat atc ctg ctg gtt cac aga	1255
Met Val His Arg Pro Val Asn Glu Asn Asp Ile Leu Leu Val His Arg	
230 235 240	
gat tct att ttt agg agt agc tgt gaa gtt gtg tca aaa gca aat tgt	1303
Asp Ser Ile Phe Arg Ser Ser Cys Glu Val Val Ser Lys Ala Asn Cys	
245 250 255	
gca aag cta aag caa ggg att gct gta cgg ttc cat gga gaa gaa ggc	1351
Ala Lys Leu Lys Gln Gly Ile Ala Val Arg Phe His Gly Glu Glu Gly	
260 265 270 275	
atg ggt caa ggt gtt gtg cgt gag tgg ttt gat att ctg tcc aat gag	1399

Met	Gly	Gln	Gly	Val	Val	Arg	Glu	Trp	Phe	Asp	Ile	Leu	Ser	Asn	Glu	
				280					285					290		
ata	gtc	aat	cct	gat	tat	gca	ttg	ttt	acc	cag	tca	gct	gat	gga	aca	1447
Ile	Val	Asn	Pro	Asp	Tyr	Ala	Leu	Phe	Thr	Gln	Ser	Ala	Asp	Gly	Thr	
			295					300					305			
act	ttt	cag	cct	aat	agc	aac	tct	tat	gta	aat	cct	gat	cac	ttg	aac	1495
Thr	Phe	Gln	Pro	Asn	Ser	Asn	Ser	Tyr	Val	Asn	Pro	Asp	His	Leu	Asn	
		310					315					320				
tat	ttt	cgg	ttt	gct	ggg	cag	atc	ttg	gga	tta	gcg	ttg	aac	cac	agg	1543
Tyr	Phe	Arg	Phe	Ala	Gly	Gln	Ile	Leu	Gly	Leu	Ala	Leu	Asn	His	Arg	
	325					330					335					
cag	ctg	gtc	aat	att	tac	ttc	aca	cga	tcc	ttc	tac	aag	cac	att	ctt	1591
Gln	Leu	Val	Asn	Ile	Tyr	Phe	Thr	Arg	Ser	Phe	Tyr	Lys	His	Ile	Leu	
	340				345					350					355	
ggg	att	cct	gta	aat	tac	caa	gat	gtg	gca	tcc	att	gat	cca	gaa	tat	1639
Gly	Ile	Pro	Val	Asn	Tyr	Gln	Asp	Val	Ala	Ser	Ile	Asp	Pro	Glu	Tyr	
			360						365					370		
gcg	aaa	aat	ttg	caa	tgg	att	tta	gat	aat	gat	ata	agt	gat	ctg	ggg	1687
Ala	Lys	Asn	Leu	Gln	Trp	Ile	Leu	Asp	Asn	Asp	Ile	Ser	Asp	Leu	Gly	
			375					380					385			
cta	gaa	cta	act	ttt	tct	gtt	gag	act	gat	gtg	ttt	gga	gca	atg	gaa	1735
Leu	Glu	Leu	Thr	Phe	Ser	Val	Glu	Thr	Asp	Val	Phe	Gly	Ala	Met	Glu	
		390					395					400				
gag	gtg	cct	ttg	aaa	cct	ggg	ggg	ggg	agt	att	ctt	gtg	aca	caa	aat	1783
Glu	Val	Pro	Leu	Lys	Pro	Gly	Gly	Gly	Ser	Ile	Leu	Val	Thr	Gln	Asn	
	405					410					415					
aat	aaa	gcg	gag	tac	gtc	cag	ctt	gtt	act	gaa	ctt	cga	atg	aca	aga	1831
Asn	Lys	Ala	Glu	Tyr	Val	Gln	Leu	Val	Thr	Glu	Leu	Arg	Met	Thr	Arg	
	420				425					430					435	
gcc	att	cag	cct	cag	atc	aat	gct	ttt	tta	cag	ggc	ttt	cat	atg	ttc	1879
Ala	Ile	Gln	Pro	Gln	Ile	Asn	Ala	Phe	Leu	Gln	Gly	Phe	His	Met	Phe	
			440					445						450		
att	cca	ccc	tcc	ctc	ata	cag	ctt	ttt	gat	gaa	tat	gaa	ttg	gag	cta	1927
Ile	Pro	Pro	Ser	Leu	Ile	Gln	Leu	Phe	Asp	Glu	Tyr	Glu	Leu	Glu	Leu	
			455					460					465			
ctg	ctt	tct	ggc	atg	cca	gaa	att	gat	gtg	agt	gat	tgg	ata	aaa	aat	1975
Leu	Leu	Ser	Gly	Met	Pro	Glu	Ile	Asp	Val	Ser	Asp	Trp	Ile	Lys	Asn	
		470					475					480				
aca	gaa	tac	aca	agt	ggc	tat	gaa	aga	gaa	gat	cca	gtt	att	cag	tgg	2023
Thr	Glu	Tyr	Thr	Ser	Gly	Tyr	Glu	Arg	Glu	Asp	Pro	Val	Ile	Gln	Trp	
	485					490					495					
ttc	tgg	gaa	gtt	gta	gaa	gac	att	act	caa	gag	gag	aga	gtt	ctt	ctc	2071
Phe	Trp	Glu	Val	Val	Glu	Asp	Ile	Thr	Gln	Glu	Glu	Arg	Val	Leu	Leu	

500	505	510	515	
tta cag ttt gtt acg ggc agt tcc agg gtc cca cat ggt ggg ttt gct				2119
Leu Gln Phe Val Thr Gly Ser Ser Arg Val Pro His Gly Gly Phe Ala				
	520	525	530	
aat atc atg ggt gga agt gga ttg caa aac ttt aca atc gct gct gtg				2167
Asn Ile Met Gly Gly Ser Gly Leu Gln Asn Phe Thr Ile Ala Ala Val				
	535	540	545	
cca tat act cca aat ctt tta cca act tca agc aca tgc atc aac atg				2215
Pro Tyr Thr Pro Asn Leu Leu Pro Thr Ser Ser Thr Cys Ile Asn Met				
	550	555	560	
ctc aag tta cct gaa tac cca agt aaa gaa ata ctc aag gac aga ctt				2263
Leu Lys Leu Pro Glu Tyr Pro Ser Lys Glu Ile Leu Lys Asp Arg Leu				
	565	570	575	
ctt gtg gca cta cat tgt ggc agc tat ggt tac aca atg gca taa tga				2311
Leu Val Ala Leu His Cys Gly Ser Tyr Gly Tyr Thr Met Ala *				
	580	585	590	
agtctggaaa actcctctga ctactgatgc acaattcaga atggcagaag taatttgga				2371
aaatgtcaac aaaaaagcag cctaaatgca acccataggc agggctgatg cttccaattt				2431
ataaaggatc atcaggtttt ctgtttctct cttttccctt ttatgttttc tctgtttgta				2491
tacaattaga aaatataaaa tcacagtaga ttttattttt taaaatgcta actgaaagta				2551
atagagactg tcctttttca taattaattt tatccaagat tgtattaagg caaaatctga				2611
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attgtaaaat ttagactgat gatactaaca gttgatgaaa tgacatataa tttatatatg				2911
aaagcttacg ctatattgta tgaattattt gcatctttca gtggccagtt ttccatatgt				2971
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taaaatgtaa aaaaaaaaaa				3051

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<400> 212

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tggctcctcc tccagccctt tggctctctg ctgctcccc cggggcagga gaaagaagga    180
aagagggcca ggggtccctt gccccaccac tttccatgat gacaagagat gggaaggtag    240
ccaggcagca acagtgtacg gcgacattgg agcggacctc acggcgacct caatttccac    300
tgcgctcctt cccagagctt aagaagctgc aggctgtgg tgcccagcac caagtgcaga    360
tggacacggg tcttcatccc cttccttggc accttccatt taagccaaac attagaaatg    420
taaagaaggg cttgtttctg gagtttccag tttgttccat tcatctactc agagcatctt    480
ctttggacaa cactgtctgc agctgtgggc ccactccaag gggaggcgat ggactgtagg    540
tctgtggagc tcagcacagg gctgtgccac ggacgcgggt gtcagtgaag tcacgcgcat    600
tttcagatgg aattctcctc cccgatgtga aca atg aac gac ggt gtc act ttc      654
                               Met Asn Asp Gly Val Thr Phe
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ata gga ttg tcc tgg agc cca cgg aga cgc ggg ctt ggg att caa cgt      702
Ile Gly Leu Ser Trp Ser Pro Arg Arg Arg Gly Leu Gly Ile Gln Arg
          10               15               20

gat gct gag cgg atc ttc tct gct tca gac cag gcc tca tgt ggc ttc      750
Asp Ala Glu Arg Ile Phe Ser Ala Ser Asp Gln Ala Ser Cys Gly Phe
          25               30               35

act att cat cca cac ata gat gct gca gag aca ctg agg gga ctc aca      798
Thr Ile His Pro His Ile Asp Ala Ala Glu Thr Leu Arg Gly Leu Thr
          40               45               50               55

aat gca cct gtg cag aag gtg tca acg tgg aca aac aca ggc agg gaa      846
Asn Ala Pro Val Gln Lys Val Ser Thr Trp Thr Asn Thr Gly Arg Glu
          60               65               70

act ccc atg agc ccg tgt gcc aca tgc agt gag gga act ttg gtg gct      894
Thr Pro Met Ser Pro Cys Ala Thr Cys Ser Glu Gly Thr Leu Val Ala
          75               80               85

gag tct ggg cgg ggg tgg gct ggg ggc tca atc gat ttc cac cga gtg      942
Glu Ser Gly Arg Gly Trp Ala Gly Gly Ser Ile Asp Phe His Arg Val
          90               95               100

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tgt ctc caa atc ttt gct gga agt gca ggc aag ggg caa ggc ttg gac 990
 Cys Leu Gln Ile Phe Ala Gly Ser Ala Gly Lys Gly Gln Gly Leu Asp
 105 110 115

 acc agc gtc gct gtt cct cca ggc tgg gct gat ccc ttt tta ttt cca 1038
 Thr Ser Val Ala Val Pro Pro Gly Trp Ala Asp Pro Phe Leu Phe Pro
 120 125 130 135

 agt cac agg agc ctg ttc cct gaa atc ctg ggg aag tgt ggt gag gtg 1086
 Ser His Arg Ser Leu Phe Pro Glu Ile Leu Gly Lys Cys Gly Glu Val
 140 145 150

 gcc ccg tgc cgt cga atc ccc atc ctg gtt tac tga agtg cagaagtgc 1136
 Ala Pro Cys Arg Arg Ile Pro Ile Leu Val Tyr *
 155 160

 ataagtgctt gtgaatcagc agggagctct tggctttgac tccctgtgca gatgagccca 1196

 gggcgccagc tccttgctgg agaactcctt tgtccatttg cacgtatgga tctttcctca 1256

 ctgcttgatg ttttgaactc tcttctttgc ggttattaat gagatactca aaggtgggtca 1316

 tcttcttggc ctctatttca gccacgagct tccatggagg ggccaaactc tccatgcttc 1376

 tttccctaaa caccaacacc gtgagagccg atgtcttgtg actatttctg gagactggg 1435

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 atgtgtatct caccacaatt taagaaatat gtaatttgag gcttggagaa tttaattaag 180

 tgatttatct gatgttaact tacagctgat acatggtaga gctgcatttt aatctcagtc 240

 atctggctct ttttaaaaca attacagaga aaactttatt ttgggccatt taggaggttt 300

 agatcatttt gatcatcttc agctgtcttc tcttcacata caggaaaggc cttggaaagc 360

 agtcgttgcg ccagacagcc cagggaagag cggcagcctg aggacctagg gccacctgct 420

 gttccctggg attcatgtcc ttctggggag gagggaggac ccaggaca atg gct gct 477
 Met Ala Ala
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gtt cat gat ctg gag atg gag agc atg aat ctg aat atg ggg aga gag Val His Asp Leu Glu Met Glu Ser Met Asn Leu Asn Met Gly Arg Glu 5 10 15	525
atg aaa gaa gag ctg gag gaa gag gag aaa atg aga gag gat ggg gga Met Lys Glu Glu Leu Glu Glu Glu Glu Lys Met Arg Glu Asp Gly Gly 20 25 30 35	573
ggc aaa gat cgg gcc aag agt aaa aag gtc cac agg att gtc tca aaa Gly Lys Asp Arg Ala Lys Ser Lys Lys Val His Arg Ile Val Ser Lys 40 45 50	621
tgg atg ctg ccc gaa aag tcc cga gga aca tac ttg gag aga gct aac Trp Met Leu Pro Glu Lys Ser Arg Gly Thr Tyr Leu Glu Arg Ala Asn 55 60 65	669
tgc ttc ccg cct ccc gtg ttc atc atc tcc atc agc ctg gcc gag ctg Cys Phe Pro Pro Pro Val Phe Ile Ile Ser Ile Ser Leu Ala Glu Leu 70 75 80	717
gca gtg ttt att tac tat gct gtg tgg aag cct cag aaa cag tgg atc Ala Val Phe Ile Tyr Tyr Ala Val Trp Lys Pro Gln Lys Gln Trp Ile 85 90 95	765
acg ttg gac aca ggc atc ttg gag agt ccc ttt atc tac agt cct gag Thr Leu Asp Thr Gly Ile Leu Glu Ser Pro Phe Ile Tyr Ser Pro Glu 100 105 110 115	813
aag agg gag gaa gcc tgg agg ttt atc tca tac atg ctg gta cat gct Lys Arg Glu Glu Ala Trp Arg Phe Ile Ser Tyr Met Leu Val His Ala 120 125 130	861
gga gtt cag cac atc ttg ggg aat ctt tgt atg cag ctt gtt ttg ggt Gly Val Gln His Ile Leu Gly Asn Leu Cys Met Gln Leu Val Leu Gly 135 140 145	909
att ccc ttg gaa atg gtc cac aaa ggc ctc cgt gtg ggg ctg gtg tac Ile Pro Leu Glu Met Val His Lys Gly Leu Arg Val Gly Leu Val Tyr 150 155 160	957
ctg gca gga gtg att gca ggg tcc ctt gcc agc tcc atc ttt gac cca Leu Ala Gly Val Ile Ala Gly Ser Leu Ala Ser Ser Ile Phe Asp Pro 165 170 175	1005
ctc aga tat ctt gtg gga gct tca gga gga gtc tat gct ctg atg gga Leu Arg Tyr Leu Val Gly Ala Ser Gly Gly Val Tyr Ala Leu Met Gly 180 185 190 195	1053
ggc tat ttt atg aat gtt ctg gtg aat ttt caa gaa atg att cct gcc Gly Tyr Phe Met Asn Val Leu Val Asn Phe Gln Glu Met Ile Pro Ala 200 205 210	1101
ttt gga att ttc aga ctg ctg atc atc atc ctg ata att gtg ttg gac Phe Gly Ile Phe Arg Leu Leu Ile Ile Ile Leu Ile Ile Val Leu Asp 215 220 225	1149
atg gga ttt gct ctc tat aga agg ttc ttt gtt cct gaa gat ggg tct	1197

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Met Gly Phe Ala Leu Tyr Arg Arg Phe Phe Val Pro Glu Asp Gly Ser
   230                               235                               240

ccg gtg tct ttt gca gct cac att gca ggt gga ttt gct gga atg tcc      1245
Pro Val Ser Phe Ala Ala His Ile Ala Gly Gly Phe Ala Gly Met Ser
   245                               250                               255

att ggc tac acg gtg ttt agc tgc ttt gat aaa gca ctg atg aaa gat      1293
Ile Gly Tyr Thr Val Phe Ser Cys Phe Asp Lys Ala Leu Met Lys Asp
  260                               265                               270                               275

cca agg ttt tgg ata gca att gct gca tat tta gct tgt gtc tta ttt      1341
Pro Arg Phe Trp Ile Ala Ile Ala Ala Tyr Leu Ala Cys Val Leu Phe
           280                               285                               290

gct gtg ttt ttc aac att ttc cta tct cca gca aac tga cctgccctta      1390
Ala Val Phe Phe Asn Ile Phe Leu Ser Pro Ala Asn  *
           295                               300

ttgtaagtca attaataaaa agagccatct ggaggaaata ataaaaaaaaa ggaagactct      1450

atgaagaaac agagaagtct cagcaaaggc taacaatttt atatagagga caaacagca      1510

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ttttggagtt gacatgcatg tggattggag gaaaaataat caacatatat tctcctttcg      180

tactgtttta atcacaggaa gaagcggctt taagacaaag atcaaaccaa a atg aca      237
                               Met Thr
                               1

act gct cac ttt tac tgt caa tac tgc aca gca tca ctt ctt ggg aag      285
Thr Ala His Phe Tyr Cys Gln Tyr Cys Thr Ala Ser Leu Leu Gly Lys
   5                               10                               15

aaa tat gta cta aag gat gac agt cca tac tgt gtt aca tgt tat gat      333
Lys Tyr Val Leu Lys Asp Asp Ser Pro Tyr Cys Val Thr Cys Tyr Asp
  20                               25                               30

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cg	t	g	t	a	ttt	tct	aac	tat	tgc	gag	gaa	tgc	aaa	aaa	cca	att	gaa	tct	381
Arg	Val	Phe	Ser	Asn	Tyr	Cys	Glu	Glu	Cys	Lys	Lys	Pro	Ile	Glu	Ser				
35					40					45					50				
gat	tct	aag	gat	ctt	tgt	tac	aaa	gac	cgg	cac	tgg	cat	gaa	gga	tgc				429
Asp	Ser	Lys	Asp	Leu	Cys	Tyr	Lys	Asp	Arg	His	Trp	His	Glu	Gly	Cys				
				55					60					65					
ttc	aag	tgc	acc	aaa	tgc	aat	cac	tct	ttg	gtg	gaa	aag	cct	ttt	gct				477
Phe	Lys	Cys	Thr	Lys	Cys	Asn	His	Ser	Leu	Val	Glu	Lys	Pro	Phe	Ala				
			70					75					80						
gcc	aag	gat	gag	cgc	ctg	ctg	tgc	acg	gag	tgc	tat	tct	aac	gag	tgc				525
Ala	Lys	Asp	Glu	Arg	Leu	Leu	Cys	Thr	Glu	Cys	Tyr	Ser	Asn	Glu	Cys				
		85					90					95							
tcc	tcc	aag	tgc	ttc	cac	tgc	aag	agg	acc	atc	atg	cct	ggc	tcc	cgc				573
Ser	Ser	Lys	Cys	Phe	His	Cys	Lys	Arg	Thr	Ile	Met	Pro	Gly	Ser	Arg				
	100					105					110								
aaa	atg	gaa	ttt	aag	gga	aac	tac	tgg	cat	gaa	acc	tgt	ttt	gtg	tgt				621
Lys	Met	Glu	Phe	Lys	Gly	Asn	Tyr	Trp	His	Glu	Thr	Cys	Phe	Val	Cys				
115					120					125				130					
gag	aat	tgc	cga	caa	cct	ata	ggg	aca	aag	cct	ttg	atc	tcc	aaa	gag				669
Glu	Asn	Cys	Arg	Gln	Pro	Ile	Gly	Thr	Lys	Pro	Leu	Ile	Ser	Lys	Glu				
				135					140					145					
agt	ggc	aat	tat	tgt	gtg	cca	tgt	ttt	gag	aag	gag	ttt	gct	cac	tac				717
Ser	Gly	Asn	Tyr	Cys	Val	Pro	Cys	Phe	Glu	Lys	Glu	Phe	Ala	His	Tyr				
			150					155					160						
tgc	aac	ttt	tgt	aag	aag	gtg	ata	act	tca	ggc	ggg	ata	aca	ttt	tgt				765
Cys	Asn	Phe	Cys	Lys	Lys	Val	Ile	Thr	Ser	Gly	Gly	Ile	Thr	Phe	Cys				
		165					170					175							
gac	cag	cta	tgg	cat	aaa	gag	tgt	ttt	ctg	tgt	agt	ggc	tgt	agg	aaa				813
Asp	Gln	Leu	Trp	His	Lys	Glu	Cys	Phe	Leu	Cys	Ser	Gly	Cys	Arg	Lys				
	180					185					190								
gat	ctc	tgt	gaa	gaa	cag	ttc	atg	tcc	aga	gac	gac	tat	cca	ttc	tgc				861
Asp	Leu	Cys	Glu	Glu	Gln	Phe	Met	Ser	Arg	Asp	Asp	Tyr	Pro	Phe	Cys				
	195				200				205					210					
atg	gac	tgc	tac	aac	cat	ctt	tat	gcc	aac	aag	tgt	gta	gcc	tgt	tcc				909
Met	Asp	Cys	Tyr	Asn	His	Leu	Tyr	Ala	Asn	Lys	Cys	Val	Ala	Cys	Ser				
				215				220						225					
aaa	ccc	att	agt	ggc	ctc	aca	ggc	gcc	aag	ttt	atc	tgc	ttt	caa	gac				957
Lys	Pro	Ile	Ser	Gly	Leu	Thr	Gly	Ala	Lys	Phe	Ile	Cys	Phe	Gln	Asp				
			230				235					240							
agc	cag	tgg	cat	agc	gaa	tgc	ttt	aac	tgc	ggg	aaa	tgc	tct	gtc	tcc				1005
Ser	Gln	Trp	His	Ser	Glu	Cys	Phe	Asn	Cys	Gly	Lys	Cys	Ser	Val	Ser				
		245				250						255							

ttg gtg ggt aaa ggc ttc ctg acc cag aac aag gaa atc ttc tgc caa	1053
Leu Val Gly Lys Gly Phe Leu Thr Gln Asn Lys Glu Ile Phe Cys Gln	
260 265 270	

aaa tgt ggc tcc gga atg gac act gac atc tag gagacagt ccttgcccac	1104
Lys Cys Gly Ser Gly Met Asp Thr Asp Ile *	
275 280 285	

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ctc ctg ctg ctc ctg atg ctg gga tgc gtc ctg atg atg gtg gcg atg	96
Leu Leu Leu Leu Leu Met Leu Gly Cys Val Leu Met Met Val Ala Met	
20 25 30	

ttg cac cct ccc cac cac acc ctg cac cag act gtc aca gcc caa gcc	144
Leu His Pro Pro His His Thr Leu His Gln Thr Val Thr Ala Gln Ala	
35 40 45	

agc aag cac agc cct gaa gcc agg tac cgc ctg gac ttt ggg gaa tcc	192
Ser Lys His Ser Pro Glu Ala Arg Tyr Arg Leu Asp Phe Gly Glu Ser	
50 55 60	

cag gat tgg gta ctg gaa gct gag gat gag ggt gaa gag tac agc cct	240
Gln Asp Trp Val Leu Glu Ala Glu Asp Glu Gly Glu Glu Tyr Ser Pro	
65 70 75 80	

ctg gag ggc ctg cca ccc ttt atc tca ctg cgg gag gat cag ctg ctg	288
Leu Glu Gly Leu Pro Pro Phe Ile Ser Leu Arg Glu Asp Gln Leu Leu	
85 90 95	

gtg gcc gtg gcc tta ccc cag gcc aga agg aac cag agc cag ggc agg	336
Val Ala Val Ala Leu Pro Gln Ala Arg Arg Asn Gln Ser Gln Gly Arg	
100 105 110	

aga ggt ggg agc tac cgc ctc atc aag cag cca agg agg cag gat aag	384
Arg Gly Gly Ser Tyr Arg Leu Ile Lys Gln Pro Arg Arg Gln Asp Lys	
115 120 125	

gaa gcc cca aag agg gac tgg ggg gct gat gag gac ggg gag gtg tct	432
Glu Ala Pro Lys Arg Asp Trp Gly Ala Asp Glu Asp Gly Glu Val Ser	

130	135	140	
gaa gaa gag gag ttg acc ccg ttc agc ctg gac cca cgt ggc ctc cag			480
Glu Glu Glu Glu Leu Thr Pro Phe Ser Leu Asp Pro Arg Gly Leu Gln			
145	150	155	160
gag gca ctc agt gcc cgc atc ccc ctc cag agg gct ctg ccc gag gtg			528
Glu Ala Leu Ser Ala Arg Ile Pro Leu Gln Arg Ala Leu Pro Glu Val			
	165	170	175
cgg cac cca ctg tgt ctg cag cag cac cct cag gac agc ctg ccc aca			576
Arg His Pro Leu Cys Leu Gln Gln His Pro Gln Asp Ser Leu Pro Thr			
	180	185	190
gcc agc gtc atc ctc tgt ttc cat gat gag gcc tgg tcc act ctc ctg			624
Ala Ser Val Ile Leu Cys Phe His Asp Glu Ala Trp Ser Thr Leu Leu			
	195	200	205
cgg act gta cac agc atc ctc gac aca gtg ccc agg gcc ttc ctg aag			672
Arg Thr Val His Ser Ile Leu Asp Thr Val Pro Arg Ala Phe Leu Lys			
	210	215	220
gag atc atc ctc gtg gac gac ctc agc cag caa gga caa ctc aag tct			720
Glu Ile Ile Leu Val Asp Asp Leu Ser Gln Gln Gly Gln Leu Lys Ser			
	225	230	235
gct ctc agc gaa tat gtg gcc agg ctg gag ggg gtg aag tta ctc agg			768
Ala Leu Ser Glu Tyr Val Ala Arg Leu Glu Gly Val Lys Leu Leu Arg			
	245	250	255
agc aac aag agg ctg ggt gcc atc agg gcc cgg atg ctg ggg gcc acc			816
Ser Asn Lys Arg Leu Gly Ala Ile Arg Ala Arg Met Leu Gly Ala Thr			
	260	265	270
aga gcc acc ggg gat gtg ctc gtc ttc atg gat gcc cac tgc gag tgc			864
Arg Ala Thr Gly Asp Val Leu Val Phe Met Asp Ala His Cys Glu Cys			
	275	280	285
cac cca ggc tgg ctg gag ccc ctc ctc agc aga ata gct ggt gac agg			912
His Pro Gly Trp Leu Glu Pro Leu Leu Ser Arg Ile Ala Gly Asp Arg			
	290	295	300
agc cga gtg gta tct ccg gtg ata gat gtg att gac tgg aag act ttc			960
Ser Arg Val Val Ser Pro Val Ile Asp Val Ile Asp Trp Lys Thr Phe			
	305	310	315
cag tat tac ccc tca aag gac ctg cag cgt ggg gtg ttg gac tgg aag			1008
Gln Tyr Tyr Pro Ser Lys Asp Leu Gln Arg Gly Val Leu Asp Trp Lys			
	325	330	335
ctg gat ttc cac tgg gaa cct ttg cca gag cat gtg agg aag gcc ctc			1056
Leu Asp Phe His Trp Glu Pro Leu Pro Glu His Val Arg Lys Ala Leu			
	340	345	350
cag tcc ccc ata agc ccc atc agg agc cct gtg gtg ccc gga gag gtg			1104
Gln Ser Pro Ile Ser Pro Ile Arg Ser Pro Val Val Pro Gly Glu Val			
	355	360	365

gtg gcc atg gac aga cat tac ttc caa aac act gga gcg tat gac tct	1152
Val Ala Met Asp Arg His Tyr Phe Gln Asn Thr Gly Ala Tyr Asp Ser	
370 375 380	
ctt atg tcg ctg cga ggt ggt gaa aac ctc gaa ctg tct ttc aag gcc	1200
Leu Met Ser Leu Arg Gly Gly Glu Asn Leu Glu Leu Ser Phe Lys Ala	
385 390 395 400	
tgg ctc tgt ggt ggc tct gtt gaa atc ctt ccc tgc tct cgg gta gga	1248
Trp Leu Cys Gly Gly Ser Val Glu Ile Leu Pro Cys Ser Arg Val Gly	
405 410 415	
cac atc tac caa aat cag gat tcc cat tcc ccc ctc gac cag gag gcc	1296
His Ile Tyr Gln Asn Gln Asp Ser His Ser Pro Leu Asp Gln Glu Ala	
420 425 430	
acc ctg agg aac agg gtt cgc att gct gag acc tgg ctg ggg tca ttc	1344
Thr Leu Arg Asn Arg Val Arg Ile Ala Glu Thr Trp Leu Gly Ser Phe	
435 440 445	
aaa gaa acc ttc tac aag cat agc cca gag gcc ttc tcc ttg agc aag	1392
Lys Glu Thr Phe Tyr Lys His Ser Pro Glu Ala Phe Ser Leu Ser Lys	
450 455 460	
gct gag aag cca gac tgc atg gaa cgc ttg cag ctg caa agg aga ctg	1440
Ala Glu Lys Pro Asp Cys Met Glu Arg Leu Gln Leu Gln Arg Arg Leu	
465 470 475 480	
ggt tgt cgg aca ttc cac tgg ttt ctg gct aat gtc tac cct gag ctg	1488
Gly Cys Arg Thr Phe His Trp Phe Leu Ala Asn Val Tyr Pro Glu Leu	
485 490 495	
tac cca tct gaa ccc agg ccc agt ttc tct gga aag ctc cac aac act	1536
Tyr Pro Ser Glu Pro Arg Pro Ser Phe Ser Gly Lys Leu His Asn Thr	
500 505 510	
gga ctt ggg ctc tgt gca gac tgc cag gca gaa ggg gac atc ctg ggc	1584
Gly Leu Gly Leu Cys Ala Asp Cys Gln Ala Glu Gly Asp Ile Leu Gly	
515 520 525	
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Cys Pro Met Val Leu Ala Pro Cys Ser Asp Ser Arg Gln Gln Gln Tyr	
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Leu Gln His Thr Ser Arg Lys Glu Ile His Phe Gly Ser Pro Gln His	
545 550 555 560	
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Leu Cys Phe Ala Val Arg Gln Glu Gln Val Ile Leu Gln Asn Cys Thr	
565 570 575	
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Glu Glu Gly Leu Ala Ile His Gln Gln His Trp Asp Phe Gln Glu Asn	
580 585 590	

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Gly Met Ile Val His Ile Leu Ser Gly Lys Cys Met Glu Ala Val Val
      595                      600                      605

caa gaa aac aat aaa gat ttg tac ctg cgt ccg tgt gat gga aaa gcc      1872
Gln Glu Asn Asn Lys Asp Leu Tyr Leu Arg Pro Cys Asp Gly Lys Ala
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cgc cag cag tgg cgt ttt gac cag atc aat gct gtg gat gaa cga tga      1920
Arg Gln Gln Trp Arg Phe Asp Gln Ile Asn Ala Val Asp Glu Arg  *
      625                      630                      635                      640

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aaagagctta tatatttcat gaagctgac cttttgtgtg tgtgctcctg gtgttaggag      2040

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ccccactga agggcaaagt ccagcggatt ctacactgga ggtggacgga gccccctgcc      180

cccttc      atg gtg ggg ctg ccg ggg cct gac gtg gag ccc agc ctc cct      228
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      1                      5                      10

cca cct aag ccc ctg gag ggc atc cct gag aga gag ttc ttt gtc aag      276
Pro Pro Lys Pro Leu Glu Gly Ile Pro Glu Arg Glu Phe Phe Val Lys
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tgg gca ggg ctg tcc tac tgg cat tgc tcc tgg gtg aag gag cta cag      324
Trp Ala Gly Leu Ser Tyr Trp His Cys Ser Trp Val Lys Glu Leu Gln
      35                      40                      45

ctg gag ctg tac cac acg gtg atg tat cgc aac tac caa aga aag aac      372
Leu Glu Leu Tyr His Thr Val Met Tyr Arg Asn Tyr Gln Arg Lys Asn
      50                      55                      60

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Asp Met Asp Glu Pro Pro Pro Phe Asp Tyr Gly Ser Gly Asp Glu Asp

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gag gag cgc ttc tac cgc tat ggc atc aag cca gag tgg atg atg att Glu Glu Arg Phe Tyr Arg Tyr Gly Ile Lys Pro Glu Trp Met Met Ile 95 100 105 110			516
cac cga atc ctg aac cat agc ttt gac aag aag ggg gat gtg cac tac His Arg Ile Leu Asn His Ser Phe Asp Lys Lys Gly Asp Val His Tyr 115 120 125			564
ctg atc aag tgg aaa gac ctg ccc tat gac cag tgc acc tgg gag atc Leu Ile Lys Trp Lys Asp Leu Pro Tyr Asp Gln Cys Thr Trp Glu Ile 130 135 140			612
gat gac atc gac atc ccc tac tac gac aac ctc aag cag gcc tac tgg Asp Asp Ile Asp Ile Pro Tyr Tyr Asp Asn Leu Lys Gln Ala Tyr Trp 145 150 155			660
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aac aac ctg gag ggc ttc ctg gag gag ttt gct gac atc tcc aag gaa Asn Asn Leu Glu Gly Phe Leu Glu Glu Phe Ala Asp Ile Ser Lys Glu 415 420 425 430	1476
gac cag atc aag aag ctg cat gac ctg ctg ggg ccg cac atg ctc agg Asp Gln Ile Lys Lys Leu His Asp Leu Leu Gly Pro His Met Leu Arg 435 440 445	1524
cgg ctc aag gct gac gtg ttc aag aac atg ccg gcc aag acc gag ctc Arg Leu Lys Ala Asp Val Phe Lys Asn Met Pro Ala Lys Thr Glu Leu 450 455 460	1572
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atc ctc aca cgg aac ttt gag gca ctg aac tcc aag ggg ggc ggc aac Ile Leu Thr Arg Asn Phe Glu Ala Leu Asn Ser Lys Gly Gly Gly Asn 480 485 490	1668
caa gta tcg ctg ctc aac atc atg atg gac ctg aaa aag tgc tgc aac Gln Val Ser Leu Leu Asn Ile Met Met Asp Leu Lys Lys Cys Cys Asn 495 500 505 510	1716
cac ccc tac ctc ttc cct gtg gct gcc gtg gag gcc cct gtc ttg ccc His Pro Tyr Leu Phe Pro Val Ala Ala Val Glu Ala Pro Val Leu Pro 515 520 525	1764

aat ggc tcc tac gat gga agc tcc ctg gtc aag tct tca ggg aag ctc Asn Gly Ser Tyr Asp Gly Ser Ser Leu Val Lys Ser Ser Gly Lys Leu 530 535 540	1812
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gcc cag cag ttc tgc ttc ctc ctc tca acc cgg gca ggt ggt ctg ggc Ala Gln Gln Phe Cys Phe Leu Leu Ser Thr Arg Ala Gly Gly Leu Gly 610 615 620	2052
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gag gag cgc atc acg cag gtg gcc aag cgc aag atg atg ctc acc cac Glu Glu Arg Ile Thr Gln Val Ala Lys Arg Lys Met Met Leu Thr His 675 680 685	2244
ctg gtg gtg cgg ccc ggc ctc ggc tcc aag tcg ggg tcc atg acc aag Leu Val Val Arg Pro Gly Leu Gly Ser Lys Ser Gly Ser Met Thr Lys 690 695 700	2292
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gac gac gtg gag ggc atg atg tct cag ggc cag agg ccg gtc aca ccc Asp Asp Val Glu Gly Met Met Ser Gln Gly Gln Arg Pro Val Thr Pro 720 725 730	2388
atc cct gat gtc cag tcc tcc aaa ggg ggg aac ttg gcc gcc agt gca Ile Pro Asp Val Gln Ser Ser Lys Gly Gly Asn Leu Ala Ala Ser Ala 735 740 745 750	2436
aag aag aag cac ggt agc acc ccg cca ggt gac aac aag gac gtg gag	2484

Lys	Lys	Lys	His	Gly	Ser	Thr	Pro	Pro	Gly	Asp	Asn	Lys	Asp	Val	Glu		
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gac	agc	agt	gtg	atc	cac	tat	gac	gat	gcg	gcc	atc	tcc	aag	ctg	ctg		2532
Asp	Ser	Ser	Val	Ile	His	Tyr	Asp	Asp	Ala	Ala	Ile	Ser	Lys	Leu	Leu		
			770					775					780				
gac	cgg	aac	cag	gac	gct	aca	gat	gac	acg	gag	cta	cag	aac	atg	aac		2580
Asp	Arg	Asn	Gln	Asp	Ala	Thr	Asp	Asp	Thr	Glu	Leu	Gln	Asn	Met	Asn		
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Glu	Tyr	Leu	Ser	Ser	Phe	Lys	Val	Ala	Gln	Tyr	Val	Val	Arg	Glu	Glu		
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Asp	Gly	Val	Glu	Glu	Val	Glu	Arg	Glu	Ile	Ile	Lys	Gln	Glu	Glu	Asn		
	815				820					825					830		
gtg	gac	ccc	gac	tac	tgg	gag	aag	ctg	ctg	cgg	cac	cac	tat	gag	cag		2724
Val	Asp	Pro	Asp	Tyr	Trp	Glu	Lys	Leu	Leu	Arg	His	His	Tyr	Glu	Gln		
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cag	cag	gag	gac	ctg	gcc	cgc	aac	ctg	ggc	aag	ggc	aag	cgc	atc	cgc		2772
Gln	Gln	Glu	Asp	Leu	Ala	Arg	Asn	Leu	Gly	Lys	Gly	Lys	Arg	Ile	Arg		
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Lys	Gln	Val	Asn	Tyr	Asn	Asp	Ala	Ser	Gln	Glu	Asp	Gln	Glu	Trp	Gln		
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Asp	Glu	Leu	Ser	Asp	Asn	Gln	Ser	Glu	Tyr	Ser	Ile	Gly	Ser	Glu	Asp		
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gag	gat	gag	gac	ttt	gaa	gag	agg	ccg	gaa	ggg	cag	agt	gga	cga	cga		2916
Glu	Asp	Glu	Asp	Phe	Glu	Glu	Arg	Pro	Glu	Gly	Gln	Ser	Gly	Arg	Arg		
	895				900					905					910		
caa	tcc	cgg	agg	cag	ctg	aag	agt	gac	agg	gac	aag	ccc	ctg	ccc	ccg		2964
Gln	Ser	Arg	Arg	Gln	Leu	Lys	Ser	Asp	Arg	Asp	Lys	Pro	Leu	Pro	Pro		
				915					920					925			
ctt	ctc	gcc	cga	gtt	ggt	ggc	aac	atc	gag	gtg	ctg	ggc	ttc	aat	gcc		3012
Leu	Leu	Ala	Arg	Val	Gly	Gly	Asn	Ile	Glu	Val	Leu	Gly	Phe	Asn	Ala		
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cga	cag	cgg	aag	gcc	ttt	ctg	aac	gcc	atc	atg	cgc	tgg	ggc	atg	ccc		3060
Arg	Gln	Arg	Lys	Ala	Phe	Leu	Asn	Ala	Ile	Met	Arg	Trp	Gly	Met	Pro		
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ccg	cag	gac	gcc	ttc	aac	tcc	cac	tgg	ctg	gtg	cgg	gac	ctt	cga	ggg		3108
Pro	Gln	Asp	Ala	Phe	Asn	Ser	His	Trp	Leu	Val	Arg	Asp	Leu	Arg	Gly		
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aag	agc	gag	aag	gag	ttt	aga	gcc	tat	gtg	tcc	ctc	ttc	atg	cgg	cac		3156
Lys	Ser	Glu	Lys	Glu	Phe	Arg	Ala	Tyr	Val	Ser	Leu	Phe	Met	Arg	His		

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Leu Cys Glu Pro Gly Ala Asp Gly Ala Glu Thr Phe Ala Asp Gly Val				
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ccc cgg gag ggc ctc tcc agg cag cac gtg ctg acc cgc atc ggg gtc				3252
Pro Arg Glu Gly Leu Ser Arg Gln His Val Leu Thr Arg Ile Gly Val				
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Met Ser Leu Val Arg Lys Lys Val Gln Glu Phe Glu His Val Asn Gly				
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Lys Tyr Ser Thr Pro Asp Leu Ile Pro Glu Gly Pro Glu Gly Lys Lys				
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Pro Gly Glu Val Ile Ser Ser Asp Pro Asn Thr Pro Val Pro Ala Ser				
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Pro Ala His Leu Leu Pro Ala Pro Leu Gly Leu Pro Asp Lys Met Glu				
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Ala Gln Leu Gly Tyr Met Asp Glu Lys Asp Pro Gly Ala Gln Lys Pro				
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agg cag ccc ctg gaa gtc cag gcc ctt cca gcc gcc ttg gat aga gtg				3540
Arg Gln Pro Leu Glu Val Gln Ala Leu Pro Ala Ala Leu Asp Arg Val				
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gag agt gag gac aag cac gag agc cca gcc agc aag gag aga gcc cga				3588
Glu Ser Glu Asp Lys His Glu Ser Pro Ala Ser Lys Glu Arg Ala Arg				
	1120	1125	1130	
gag gag cgg cca gag gag acg gag aag gcc ccg ccc tcc ccg gag cag				3636
Glu Glu Arg Pro Glu Glu Thr Glu Lys Ala Pro Pro Ser Pro Glu Gln				
1135	1140	1145	1150	
ctg ccg aga gag gag gtg ctt cct gag aag gag aag atc ctg gac aag				3684
Leu Pro Arg Glu Glu Val Leu Pro Glu Lys Glu Lys Ile Leu Asp Lys				
	1155	1160	1165	
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Leu Glu Leu Ser Leu Ile His Ser Arg Gly Asp Ser Ser Glu Leu Arg				
	1170	1175	1180	
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Pro Asp Asp Thr Lys Ala Glu Glu Lys Glu Pro Ile Glu Thr Gln Gln				
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Asn Gly Asp Lys Glu Glu Asp Asp Glu Gly Lys Lys Glu Asp Lys Lys				
	1200	1205	1210	

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Ile Val Asn Tyr Asn Gln Met Pro Leu Gly Pro Tyr Val Thr Asp Ile
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Val Pro Ser Gly Val Ala Leu Phe Leu Thr Ile Pro Phe Ala Phe Phe
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Leu Pro Glu Leu Ile Phe Gly Phe Leu Val Trp Thr Met Val Ala Ala
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Thr His Ile Val Tyr Pro Leu Leu Gln Gly Trp Val Met Tyr Val Ser
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Leu Thr Ser Phe Leu Ile Ser Leu Met Phe Leu Leu Ser Tyr Leu Phe
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His Gly Thr Thr Gly Ile Leu Tyr Met Ser Ala Ala Val Leu Gln Val
100 105 110

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His Ala Thr Ile Val Ser Glu Lys Leu Leu Asp Pro Arg Ile Tyr Tyr
115 120 125

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Ile Asn Ser Ala Ala Ser Phe Phe Ala Phe Ile Ala Thr Leu Leu Tyr
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Ile Leu His Ala Phe Ser Ile Tyr Tyr His *
145 150

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Met Ala Cys
1

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Ile Leu Lys Arg Lys Ser Val Ile Ala Val Ser Phe Ile Ala Ala Phe
5 10 15

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Leu Phe Leu Leu Val Val Arg Leu Val Asn Glu Val Asn Phe Pro Leu

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Tyr Thr Tyr Arg Arg Pro Leu Arg Thr His Tyr Gly Tyr Ile Asn Val	55	60	65	
aag aca caa gag cct ttg caa ctg gac tgt gac ctt tgt gcc ata gtg				414
Lys Thr Gln Glu Pro Leu Gln Leu Asp Cys Asp Leu Cys Ala Ile Val	70	75	80	
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Ser Asn Ser Gly Gln Met Val Gly Gln Lys Val Gly Asn Glu Ile Asp	85	90	95	
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gaa gaa gat gtc ggc cgc atg acc atg att cga gtt gtg tcc cat acc				558
Glu Glu Asp Val Gly Arg Met Thr Met Ile Arg Val Val Ser His Thr	120	125	130	
agc gtt cct ctt ttg cta aaa aac cct gat tat ttt ttc aag gaa gcg				606
Ser Val Pro Leu Leu Leu Lys Asn Pro Asp Tyr Phe Phe Lys Glu Ala	135	140	145	
aat act act att tgt gtt att tgg gga cct ttc cgc aat atg agg aaa				654
Asn Thr Thr Ile Cys Val Ile Trp Gly Pro Phe Arg Asn Met Arg Lys	150	155	160	
gat ggc aat ggc atc gtt tac aac atg ttg aaa aag aca gtt ggt atc				702
Asp Gly Asn Gly Ile Val Tyr Asn Met Leu Lys Lys Thr Val Gly Ile	165	170	175	
tat ccg aat gcc caa ata tac gtg acc aca gag aag cgc atg agt tac				750
Tyr Pro Asn Ala Gln Ile Tyr Val Thr Thr Glu Lys Arg Met Ser Tyr	180	185	190	195
tgt gat gga gtt ttt aag aag gaa act ggg aag gac agg ggg cat gca				798
Cys Asp Gly Val Phe Lys Lys Glu Thr Gly Lys Asp Arg Gly His Ala	200	205	210	
agg cga ctg ctg att tct aca gac act ttt taa gcgattac cagtgtggc				849
Arg Arg Leu Leu Ile Ser Thr Asp Thr Phe *	215	220		
aagtggaaact acctttccgg tcctcttaca agcatccagt cacttgctga aatgtcataa				909
gcgatataaaa cctgctgaca ggccaggatc attgcatctc ctgcctcctc cttccacgta				969
acaaatctca ttgttgattg gcatatggca gcaagcatcc caacaccag agtggtgttc				1029
ttattttctga gggagcaggg tctgtgtgtg aattgcacac acagggagca atcccctgcc				1089

ctgatacagg caacctgagt gcttagttcc ttctctgctc agaacttagt gtgactatgt 1149
ggcctacctc acattgtttg tgttacacct acacaggaaa aaggaaaaat gtccttttga 1209
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agtgtccct gctaacgggg acagatttta acatt atg gca ggg agg cat cag 173
Met Ala Gly Arg His Gln
1 5
aat cgt agt ttt cct ctt cca gga gtt cag tca agt ggt caa gta cat 221
Asn Arg Ser Phe Pro Leu Pro Gly Val Gln Ser Ser Gly Gln Val His
10 15 20
gca ttt gga aat tgt tca gac agt gat att ttg gag gag gat gct gaa 269
Ala Phe Gly Asn Cys Ser Asp Ser Asp Ile Leu Glu Glu Asp Ala Glu
25 30 35
gtg tat gaa ctt cga tcc aga gga aaa gag aaa gtc cga aga agt aca 317
Val Tyr Glu Leu Arg Ser Arg Gly Lys Glu Lys Val Arg Arg Ser Thr
40 45 50
tca aga gat aga ctt gac gac att ata gta tta aca aaa gat ata caa 365
Ser Arg Asp Arg Leu Asp Asp Ile Ile Val Leu Thr Lys Asp Ile Gln
55 60 65 70
gaa gga gat aca tta aat gca ata gcc ctt cag tac tgt tgt acg gta 413
Glu Gly Asp Thr Leu Asn Ala Ile Ala Leu Gln Tyr Cys Cys Thr Val
75 80 85
gca gat atc aag aga gtt aac aat ctc atc agt gat caa gac ttt ttt 461
Ala Asp Ile Lys Arg Val Asn Asn Leu Ile Ser Asp Gln Asp Phe Phe
90 95 100
gcc ctt agg tct atc aaa att cca gta aaa aag ttc agt tcc ttg acc 509
Ala Leu Arg Ser Ile Lys Ile Pro Val Lys Lys Phe Ser Ser Leu Thr
105 110 115

gaa aca ctt tgt cct cca aaa gga aga cag act tca cgt cat tca tct	557
Glu Thr Leu Cys Pro Pro Lys Gly Arg Gln Thr Ser Arg His Ser Ser	
120 125 130	
ggt caa tac tct tcc gaa caa cag gaa att ttg cca gct aat gat tct	605
Val Gln Tyr Ser Ser Glu Gln Gln Glu Ile Leu Pro Ala Asn Asp Ser	
135 140 145 150	
ctt gct tac agt gac tca gct ggt agc ttt tta aaa gaa gta gac cga	653
Leu Ala Tyr Ser Asp Ser Ala Gly Ser Phe Leu Lys Glu Val Asp Arg	
155 160 165	
gac ata gaa caa ata gta aag tgt aca gac aat aag aga gag aac ctc	701
Asp Ile Glu Gln Ile Val Lys Cys Thr Asp Asn Lys Arg Glu Asn Leu	
170 175 180	
aat gag gta gta tcg gcc tta aca gca caa caa atg cgt ttt gaa cct	749
Asn Glu Val Val Ser Ala Leu Thr Ala Gln Gln Met Arg Phe Glu Pro	
185 190 195	
gat aac aaa aac act caa cgt aaa gac ccc tat tat gga gca gac tgg	797
Asp Asn Lys Asn Thr Gln Arg Lys Asp Pro Tyr Tyr Gly Ala Asp Trp	
200 205 210	
gga ata ggg tgg tgg aca gct gta gtg ata atg ttg ata gta ggt ata	845
Gly Ile Gly Trp Trp Thr Ala Val Val Ile Met Leu Ile Val Gly Ile	
215 220 225 230	
ata aca cca gtg ttt tat ttg ttg tat tat gaa att tta gct aag gtg	893
Ile Thr Pro Val Phe Tyr Leu Leu Tyr Tyr Glu Ile Leu Ala Lys Val	
235 240 245	
gat gtt agt cat cat tca aca gtg gac tct tca cat tta cat tca aaa	941
Asp Val Ser His His Ser Thr Val Asp Ser Ser His Leu His Ser Lys	
250 255 260	
atc aca ccc cca tca cag cag aga gaa atg gaa aat gga att gtg cca	989
Ile Thr Pro Pro Ser Gln Gln Arg Glu Met Glu Asn Gly Ile Val Pro	
265 270 275	
act aaa gga ata cat ttc agc caa caa gat gat cat aaa ctg tat agt	1037
Thr Lys Gly Ile His Phe Ser Gln Gln Asp Asp His Lys Leu Tyr Ser	
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caa gat tct cag tca cct gct gct caa cag gaa aca tag caattagctc	1086
Gln Asp Ser Gln Ser Pro Ala Ala Gln Gln Glu Thr *	
295 300 305	
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<212> DNA
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gccgagggat ccctccgagg acaccccagc agtggacggc agcacagaca cggacagg 178
atg ccc ttg aag ctc tac ttg cct ggt ggt aat tcc agg atg acc cag 226
Met Pro Leu Lys Leu Tyr Leu Pro Gly Gly Asn Ser Arg Met Thr Gln
1 5 10 15
gag agg ctg gaa aga gcg ttc aaa cgg cag ggc agc cag ccc gca cct 274
Glu Arg Leu Glu Arg Ala Phe Lys Arg Gln Gly Ser Gln Pro Ala Pro
20 25 30
gtc agg aaa aat cag ttg ctg ccg tct gac aag gtg gat ggt gag ctg 322
Val Arg Lys Asn Gln Leu Leu Pro Ser Asp Lys Val Asp Gly Glu Leu
35 40 45
ggt gcc ctg cgg ctc gag gat gtg gag gat gag ttg ata agg gaa gag 370
Gly Ala Leu Arg Leu Glu Asp Val Glu Asp Glu Leu Ile Arg Glu Glu
50 55 60
gtc atc ctg tcg cca gtc cca tca gtg ctc aag ttg cag aca gca tca 418
Val Ile Leu Ser Pro Val Pro Ser Val Leu Lys Leu Gln Thr Ala Ser
65 70 75 80
aaa cca att gac ctc tca gta gca aag gaa ata aag acc ctt ctg ttt 466
Lys Pro Ile Asp Leu Ser Val Ala Lys Glu Ile Lys Thr Leu Leu Phe
85 90 95

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ggt tcc agc ttt tgc tgt ttc aat gaa gaa tgg aaa ctt cag agt ttt Gly Ser Ser Phe Cys Cys Phe Asn Glu Glu Trp Lys Leu Gln Ser Phe 100 105 110	514
tcc ttt agt aac aca gcc tca tta aaa tac ggc ata gtg cag aac aag Ser Phe Ser Asn Thr Ala Ser Leu Lys Tyr Gly Ile Val Gln Asn Lys 115 120 125	562
ggt ggt cct tgc gga gtc ctg gca gct gtc caa ggc tgt gtc cta cag Gly Gly Pro Cys Gly Val Leu Ala Ala Val Gln Gly Cys Val Leu Gln 130 135 140	610
aaa ctc ctg ttt gaa gga gat agc aaa gcc gac tgt gct cag gga ctg Lys Leu Leu Phe Glu Gly Asp Ser Lys Ala Asp Cys Ala Gln Gly Leu 145 150 155 160	658
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gac att gtg tgg cgg gca ggg ggc cga gag aga gcc gtt gtt gca ctg Asp Ile Val Trp Arg Ala Gly Gly Arg Glu Arg Ala Val Val Ala Leu 180 185 190	754
gct tcg aga aca cag cag ttc agt cca aca ggg aaa tac aaa gca gat Ala Ser Arg Thr Gln Gln Phe Ser Pro Thr Gly Lys Tyr Lys Ala Asp 195 200 205	802
gga gtc tta gaa aca ctt acg ctt cac agt ttg acc tgc tat gag gac Gly Val Leu Glu Thr Leu Thr His Ser Leu Thr Cys Tyr Glu Asp 210 215 220	850
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gag ctc atc cgc cag gac ttt gat gtc ccc acc agc cac ctg att gga Glu Leu Ile Arg Gln Asp Phe Asp Val Pro Thr Ser His Leu Ile Gly 260 265 270	994
gca cat ggc tac tgt aca cag gaa ctt gtc aat ctg ctc ctg act ggg Ala His Gly Tyr Cys Thr Gln Glu Leu Val Asn Leu Leu Leu Thr Gly 275 280 285	1042
aaa gct gtg tcc aac gtt ttc aac gat gtg gtt gag ctg gat tct ggg Lys Ala Val Ser Asn Val Phe Asn Asp Val Val Glu Leu Asp Ser Gly 290 295 300	1090
gat ggg aac atc aca ctt ctc aga ggc att gct gca cgc agt gat att Asp Gly Asn Ile Thr Leu Leu Arg Gly Ile Ala Ala Arg Ser Asp Ile 305 310 315 320	1138
ggc ttc tta tct ctc ttt gag cat tac aac atg tgc cag gtt ggc tgc	1186

Gly Phe Leu Ser Leu Phe Glu His Tyr Asn Met Cys Gln Val Gly Cys	
325 330 335	
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Phe Leu Lys Thr Pro Arg Phe Pro Ile Trp Val Val Cys Ser Glu Ser	
340 345 350	
cac ttc agc atc ctc ttt agc ctg cag ccg ggg ctc ctg cgt gac tgg	1282
His Phe Ser Ile Leu Phe Ser Leu Gln Pro Gly Leu Leu Arg Asp Trp	
355 360 365	
agg act gag agg ctc ttt gac ttg tac tac tac gat ggc ctg gcc aac	1330
Arg Thr Glu Arg Leu Phe Asp Leu Tyr Tyr Tyr Asp Gly Leu Ala Asn	
370 375 380	
cag cag gag cag atc cgg ctg acc att gac acc acc caa acc atc tct	1378
Gln Gln Glu Gln Ile Arg Leu Thr Ile Asp Thr Thr Gln Thr Ile Ser	
385 390 395 400	
gag gac aca gac aac gac ctt gtc cca ccc ctc gag ctc tgc atc aga	1426
Glu Asp Thr Asp Asn Asp Leu Val Pro Pro Leu Glu Leu Cys Ile Arg	
405 410 415	
acc aag tgg aag ggg gca tca gtg aac tgg aac ggc tca gac ccc atc	1474
Thr Lys Trp Lys Gly Ala Ser Val Asn Trp Asn Gly Ser Asp Pro Ile	
420 425 430	
ctg tga ccgttgatg tgggttaaacc ctgtggtcca ccactcatca cctcatcacc	1530
Leu *	
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Ala Val Met Leu Ser Leu Gly Pro Gly Ser Arg Gly Arg Ala Ser Arg	
15 20 25 30	
ccc tcc agt ggg acc cag cac tgt gac ata acc tgg aaa cct cca aca	203
Pro Ser Ser Gly Thr Gln His Cys Asp Ile Thr Trp Lys Pro Pro Thr	
35 40 45	
cag act gag ggc ggc ttc cag aag ggg agg ggc cgg gac agc gag agc	251
Gln Thr Glu Gly Gly Phe Gln Lys Gly Arg Gly Arg Asp Ser Glu Ser	
50 55 60	
tgg gcc tac cct gtg gcc ccc atg ttc agc cct cct tcc tca gag cct	299
Trp Ala Tyr Pro Val Ala Pro Met Phe Ser Pro Pro Ser Ser Glu Pro	
65 70 75	
cac ctg ggc ctc ctg atg gct cct gtc ccc tgc ctg ccc tgc tgt acg	347
His Leu Gly Leu Leu Met Ala Pro Val Pro Cys Leu Pro Cys Cys Thr	
80 85 90	
cct gcc cac cct tgg cct gtg tgc tcc gat aag cca ttg ctg tgt tca	395
Pro Ala His Pro Trp Pro Val Cys Ser Asp Lys Pro Leu Leu Cys Ser	
95 100 105 110	
ctg ggc cag tcg gtg gtg gag ccc tcc taa g gattcacggt ggccccccct	446
Leu Gly Gln Ser Val Val Glu Pro Ser *	
115 120	
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ccccagtgcc accactgcct accagtttct ctgcacccca tgacctgtgc ccgtcttctg	566
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ccttgggcga ggcatggc	1184

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tgc aga aaa gcc ttc aga cag cct gca cac ctt gct cag cat cag aga Cys Arg Lys Ala Phe Arg Gln Pro Ala His Leu Ala Gln His Gln Arg 225 230 235	781
att cat act gga gag aaa ccc tat gaa tgt aaa gaa tgt ggc aaa gcc Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Lys Glu Cys Gly Lys Ala 240 245 250	829
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Asn Val His Leu Val Ser His Leu Arg Ile His Thr Gly Glu Lys Pro	
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Tyr Glu Cys Lys Glu Cys Gly Lys Ala Phe Arg Ile Ser Ser Gln Leu	
415 420 425	
gct act cat cag aga att cat act gga gag aag cct tat gaa tgt att	1405
Ala Thr His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Ile	
430 435 440	
gaa tgt gga aat gct ttc aaa cag aga tca cac ctt gcc caa cat cag	1453
Glu Cys Gly Asn Ala Phe Lys Gln Arg Ser His Leu Ala Gln His Gln	
445 450 455 460	
aaa act cat aca gga gag aaa cct tat gag tgt aat gaa tgc ggg aaa	1501
Lys Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asn Glu Cys Gly Lys	
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gcc ttc agc caa act tgc aat ctt act caa cat caa aga att cat act	1549
Ala Phe Ser Gln Thr Cys Asn Leu Thr Gln His Gln Arg Ile His Thr	
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Gly Glu Lys Pro Tyr Lys Cys Thr Glu Cys Gly Lys Ala Phe Ser Asp	
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Ser Ser Ser Cys Ala Gln His Gln Arg Leu His Thr Gly Gln Arg Pro	
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Tyr Gln Cys Phe Glu Cys Gly Lys Ala Phe Arg Arg Lys Leu Ser Leu	
525 530 535 540	
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Ile Cys His Gln Arg Ser His Thr Gly Glu Glu Pro *	
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